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UNIVERSITY
# of MANITOBA

WINNIPEG

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ANNUAL CALENDAR
Session 1919-20

CALENDAR.

University of Manitoba

WINNIPEG

Incorporated by Act of the Manitoba
Legislature, 1877

Definitely Reorganized as a Provincial
University, 1917

1919-1920

WINNIPEG
Printed for the University by the Free Press Job Dept.
1919

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ALMANAC, 1919-1920

1919—AUGUST

21—Thur.	Last day for receiving applications for the September Examinations.

SEPTEMBER

2—Tues.	Board of Studies meets.
4—Thur.	Supplemental and Matriculation Examinations begin.
9—Tues.	Finance Committee meets.
16—Tues.	Registration. Opening day of First Term. Board of Studies meets.
17—Wed.	University Lectures begin.
18—Thur.	University Council meets.
19—Fri.	Imposition of fine for late registration begins.

OCTOBER

6—Mon.	Registration closes.
7—Tues.	Board of Studies meets.
14—Tues.	Finance Committee meets.
21—Tues.	Board of Studies meets.

NOVEMBER

3—Mon.	Payment of first moiety of Scholarships.
4—Tues.	Board of Studies meets.
11—Tues.	Finance Committee meets.
18—Tues.	Board of Studies meets.
20—Thur.	University Council meets.
26—Wed.	Last day for receiving applications for December Supplemental and Special Examinations in Arts, Science, Medicine, Engineering, Architecture and Pharmacy.

DECEMBER

2—Tues.	Board of Studies meets.
5—Fri.	Lectures close for students writing December Examinations.
9—Tues.	Finance Committee meets.
10—Wed.	December Examinations begin.
16—Tues.	Board of Studies meets.
23—Tues.	First Term ends.
24—Wed.	Christmas Vacation begins.

1920—JANUARY

5—Mon.	Opening day of Second Term. University Lectures begin.
6—Tues.	Board of Studies meets.
12—Mon.	Examination for Dental License begins.
13—Tues.	Finance Committee meets.
15—Thur.	University Council meets.
20—Tues.	Board of Studies meets.

FEBRUARY

2—Mon.	Payment of second moiety of scholarships.
3—Tues.	Board of Studies meets.
10—Tues.	Finance Committee meets.
17—Tues.	Board of Studies meets.

MARCH

2—Tues.	Board of Studies meets.
9—Tues.	Most Rev. R. Machray, D.D., LL.D., Archbishop of Rupert's Land, first Chancellor of the University, died, 1904.
	Finance Committee meets.
16—Tues.	Board of Studies meets.
18—Thur.	University Council meets.
29—Mon.	Last day for receiving applications for April Supplemental and Special Examinations in Arts, Science, Medicine, Engineering, Architecture and Pharmacy.

APRIL

6—Tues.	Board of Studies meets.
9—Fri.	University Lectures close.
12—Mon.	First Term Supplemental Examinations in Arts, Science, Medicine, Engineering, Architecture and Pharmacy begin.
13—Tues.	Finance Committee meets.
19—Mon.	Regular April Examinations in Arts, Science, Medicine, Engineering, Architecture and Pharmacy begin.
	N.B.—The practical Examinations in Arts, Science, Medicine, Engineering and Pharmacy will be held in April, prior to the opening of the written Examinations. The dates of the Examinations in Agriculture and Home Economics will be fixed by Manitoba Agricultural College and those of the Examinations in Law by Manitoba Law School.
26—Mon.	Regular Examinations in Accountancy begin.
20—Tues.	Board of Studies meets.

MAY

4—Tues.	Board of Studies meets.
11—Tues.	Finance Committee meets.
14—Fri.	Conferring of degrees at 3 o'clock p.m. Meeting of Convocation.

JUNE

1—Tues.	Board of Studies meets.
8—Tues.	Finance Committee meets.
14—Mon.	Examination for Dental License begins.
15—Tues.	Examination for Nurses' Registration begins.
17—Thur.	University Council meets.

THE UNIVERSITY OF MANITOBA

HISTORICAL SKETCH

The University of Manitoba was established by Act of the Manitoba Legislature, in 1877, "for the purpose (as the preamble states) of raising the standard of higher education in the Province and of enabling all denominations and classes to obtain academic degrees." The government of the University was vested in a Chancellor, a Vice-Chancellor and a University Council, with powers as a "body politic and corporate" to receive, hold and sell property, to arrange courses of study, to hold examinations and to grant degrees. The Act provided for the affiliation of Colleges and for the granting of degrees in Divinity by those Colleges to students who should have obtained recognized academic standing in Arts subjects. The Chancellor was to be appointed by the Lieutenant-Governor-in-Council, and the University Council was to consist of seven representatives from each of the affiliated Colleges, three from Convocation and two from the Board of Education of the Province.

The three Colleges already in existence in Manitoba were affiliated with the University at its inception. St. John's, the Anglican institution, had been reorganized in 1866 by Bishop (afterwards Archbishop) Machray, who became in 1877 the first Chancellor of the University. St. Boniface had grown from a mission school early in the century to be the chief Roman Catholic College of the West. Manitoba College, in connection with the Presbyterian Church, had been organized in 1871. The Vice-Chancellor of the new University was the Hon. Joseph Royal; the Bursar was Mr. Duncan Macarthur; and the Registrar Mr. E. W. Jarvis.

Since 1877 four Colleges have been received into affiliation with the University. The Manitoba Medical College was affiliated in 1882, Wesley College was affiliated in 1888, the Manitoba College of Pharmacy in 1902, and the Manitoba Agricultural College in 1907.

In 1885 an agreement between the Dominion Government and the Province of Manitoba provided for an endowment not exceeding 150,000 acres of land for the University of Manitoba "for its maintenance as a University capable of giving proper training in the higher branches of education."

In 1900 an amendment to the University Act gave the University "power to give instruction and teaching in the several faculties and different branches of knowledge as may from time to time be directed by the Council of the University." The present site was granted by the Dominion Government, and the corner-stone was laid in 1900 by the King, then Duke of Cornwall and York. Four new chairs in the Natural and Physical Sciences were founded in 1904, and as well one in Mathematics and one in the combined subjects of Histology, Pathology and Bacteriology. The number of Science chairs was subsequently increased to six, Geology and Mineralogy, which at the first was combined in part with Botany and in part with Physics, being given independent status, and as well Zoology, which at first was attached to Physiology. A department of Civil Engineering was organized in 1907, and departments of Electrical Engineering, Political Economy, English and History in 1909. Departments of Architecture, of French and of German were created in 1913, and began their work in the fall of that year. In the fall of 1914 the following new departments were instituted:—A department of Pharmacy, which took over the teaching in this subject formerly done by the Manitoba College of Pharmacy; a department of Mechanical Engineering; a department of Classics. In addition, the work of the departments of English, French, German, History and Political Economy, which had hitherto been confined to the subjects of the Third and Fourth Years in Arts, was extended to include those of the First and Second Years and the department of Mathematics, which had hitherto covered only the Second, Third and Fourth Years, assumed responsibility for the work of the First Year as well. The University thus came into the position of offering for the first time through its own faculty the full work of the course in Arts for the B.A. degree.

The affiliation of Manitoba Agricultural College with the University was terminated by an Act of the Provincial Legislature in 1912 but restored again in 1916.

The first President of the University, Dr. James A. MacLean, assumed office on January 1st, 1913.

By the University Amendment Act, 1917, there is introduced into the corporation a Board of Governors of nine members, appointed by the Lieutenant-Governor-in-Council for a period of three years, three retiring each year, and in this Board is vested "the government, conduct, management and control of the University," including its lands, investments, appointments, limits of instruction, etc. The Council of the University is continued, but with a reduction in the number of its members from seventy-two to twenty-eight and a limitation of the sphere of its activity to that of "general charge of the academic work of the University," within which range it is still subject to the plenary power vested in the Board of Governors. Its representative character is maintained as is shown by the following composition: The Chancellor, the President, four representatives from the faculty of the University, two representatives from Manitoba Agricultural College, one representative from Manitoba Medical College, one representative from the College of Physicians and Surgeons of Manitoba, six members to be appointed by the Lieutenant-Governor in Council, four representatives to be elected by Convocation and two representatives from each of the affiliated Arts Colleges, St. Boniface, St. John's, Manitoba and Wesley. Definite legislative recognition is given to the practice of the submission annually to the Lieutenant-Governor-in-Council through the Minister of Education of a budget of "anticipated revenues and proposed expenditures" and of the appropriation by the Legislature of money for University expenditures.

COLLEGES AFFILIATED WITH THE UNIVERSITY

St. Boniface College, St. Boniface, in connection with the Roman Catholic Church. *Rector*—Rev. Gregory Féré, S.J., St. Boniface College.

St. John's College, Winnipeg, in connection with the Church of England. *Deputy Warden*—Very Rev. Dean Coombes, "The Deanery," McCallum Place.

Manitoba College, Winnipeg, in connection with the Presbyterian Church in Canada. *Principal*—Rev. John McKay, M.A., D.D.

Wesley College, Winnipeg, in connection with the Methodist Church in Canada. *Principal*—Rev. J. H. Riddell, M.A., D.D., 223 Colony St.

Manitoba Medical College, Winnipeg. Dean—S. Willis Prowse, B.A., M.D., 801 Boyd Bldg.

Manitoba Law School, Winnipeg. Chairman of Trustees—Hon. H. A. Robson, K.C., LL.D., Union Bank Building.

Manitoba Agricultural College. President—J. B. Reynolds, M.A., Agricultural College, St. Vital.

Visitor
SIR JAMES AIKINS, M.A., K.C.
Lieutenant-Governor of Manitoba

Chairman of Board of Governors
ISAAC PITBLADO, M.A., LL.B., K.C.

Vice-Chairman of Board of Governors
JOHN A. MACHRAY, M.A., LL.B., K.C.

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MOST REV. S. P. MATHESON, D.D., D.C.L.
Archbishop of Rupert's Land

Vice-Chancellor
RIGHT REV. MSGR. A. A. CHERRIER, LL.D.

President
JAMES A. MacLEAN, Ph.D., LL.D.

Honorary Bursar
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Registrar
W. J. SPENCE, B.A.

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ALAN CRAWLEY

BOARD OF GOVERNORS, 1918-1919

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Vice-Chairman:
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Secretary:
W. J. SPENCE, B.A.

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MR. R. T. RILEY, of Winnipeg.
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Appointed for a two-year term expiring in 1919:
SIR AUGUSTUS NANTON, of Winnipeg.
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MR. WILLIAM IVERACH, of Isabella.

Appointed for a three-year term expiring in 1921:
HENRY H. CHOWN, M.D., of Winnipeg.
JAMES McKENTY, M.D., of Winnipeg.
MR. A. J. COTTON, of Swan River.

COUNCIL OF THE UNIVERSITY, 1918-1919

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MOST REV. S. P. MATHESON, D.D., D.C.L., Archbishop of Rupert's Land, Chancellor

Vice-Chairman:
RIGHT REV. MSGR. A. A. CHERRIER, LL.D.

President of the University:
JAMES A. MacLEAN, Ph.D., LL.D.

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MATTHEW A. PARKER, B.Sc., F.C.S.

Appointed by the Manitoba Agricultural College:
J. B. REYNOLDS, M.A., President.
G. A. SPROULE, B.A.

Appointed by Manitoba Medical College:
E. S. POPHAM, M.A., M.D., C.M.

Appointed by the College of Physicians and Surgeons of Manitoba:
D. H. McCALMAN, B.A., M.D., C.M.

Appointed by the Lieutenant-Governor-in-Council:
ROBERT FLETCHER, B.A.
MRS. R. F. McWILLIAMS, M.A.
WILLIAM A. McINTYRE, B.A., LL.D.
FRANK H. SCHOFIELD, M.A.
REV. JOHN L. BROWN
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Elected by the Graduates of the University:
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DANIEL McINTYRE, M.A., LL.D.
H. A. ROBSON, K.C., LL.D.
W. J. SPENCE, B.A.

Appointed by St. Boniface College:
REV. GREGORY FÉRÉ, S.J., Rector.
RIGHT REV. MSGR. A. A. CHERRIER, LL.D.

Appointed by St. John's College:
VERY REV. G. F. COOMBES, M.A.
REV. E. A. WHARTON GILL, M.A.

Appointed by Manitoba College:
REV. A. B. BAIRD, M.A., D.D.
REV. R. S. LAIDLAW, M.A., D.D.

Appointed by Wesley College:
REV. J. H. RIDDELL, B.A., D.D., Principal.
REV. A. STEWART, D.D.

STANDING COMMITTEES OF THE UNIVERSITY COUNCIL, 1918-1919

Board of Studies: President MacLean (Chairman), Professor Parker, Professor F. W. Clark, Professor Heinzelmann, Very Rev. Dean Coombes, Major D. M. Duncan, Rev. Father Féré, Dr. E. S. Popham, Professor Sproule, Dr. W. A. McIntyre, Rev. Dr. Baird, Rev. Dr. Stewart, W. J. Spence (Secretary).

Library Committee: F. H. Schofield (Chairman), Professor Parker, Rev. Father Féré, Rev. Canon Gill, President MacLean, Professor Osborne, Professor Heinzelmann, F. E. Nuttall (Secretary).

Committee on Organization of Instruction: The Chancellor (Chairman), Rev. Dr. Laidlaw, Professor F. W. Clark, Hon. H. A. Robson, R. Fletcher, President MacLean, Dr. D. McIntyre, Dr. D. H. McCalman, W. J. Spence (Secretary).

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Committee on Honorary Degrees: The Chancellor (Chairman), President MacLean, Dr. D. McIntyre, Rev. Father Féré, W. J. Spence (Secretary).

UNIVERSITY FACULTY, 1919-1920

JAMES A. MacLEAN, Ph.D., LL.D.
President and Chairman of Faculty .... 192 Yale Ave.

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A. H. REGINALD BULLER, B.Sc. (Lond.), Ph.D. (Leipzig), D.Sc. (Birm.), F.R.S.C.
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* Absent on leave.

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————————

Professor of Civil Engineering

————————

Professor of Philosophy and Psychology

ROBERT K. McCLUNG, M.A. (McGill), B.A. (Cantab.), D.Sc. (McGill), F.R.S.C.
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Assistant Professor of Civil Engineering.

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Assistant Professor of Electrical Engineering.

RALPH FLENLEY, M.A. (Liverpool), B. Litt. (Oxon.)
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Assistant Professor of Geology.

MAUDE A. BISSETT, B.A. (Man.)
Assistant Professor of Greek and Latin ... 957 McMillan Ave.

EDWARD M. BURWASH, M.A., Ph.D.
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Assistant Professor of Chemistry.

Assistant Professor of Political Economy.

NORMAN MACDONALD, M.A. (Queen's)
Lecturer in History ad interim 215 Spence St.

Lecturer in French.

Lecturer in Botany.

Lecturer in Zoology.

Lecturer in Philosophy and Psychology.

CHARLES W. LOWE, M.Sc. (Birmingham)
Assistant in Botany ... 1588 Kellar Ave., St. James

LILY A. McCULLOUGH, M.A. (Man.), LL.B. (Man.)
Assistant in Political Economy.

CHARLES FREDERICK CAMERON, B.A. (Man.), B.C.E. (Man.).
Assistant in Physics ... 403 Toronto St.

Assistant in Physiology.

Demonstrator in Chemistry.

JOHN A. M. EDWARDS, B.A. (Man.)
Fellow in English.

LUCAS G. THOMPSON, B.Sc. (Man.).
Fellow in Geology.

INSTRUCTION IN THE UNIVERSITY

Instruction is now offered by the University of Manitoba in all subjects of the course in Arts for the B.A. degree, except the options, Hebrew, Biblical Greek, and Icelandic; in all subjects of the course for the B.Sc. degree, except Anatomy; in Chemistry, Zoology, Histology, Physiology, Pathology and Bacteriology, of the course in Medicine for the M.D. degree; in Civil and Electrical Engineering; in Architecture; and in Pharmacy. Instruction in the subjects of the course in Arts, not offered by the University, may be obtained at one of the affiliated Arts Colleges. The affiliated Colleges also offer instruction in a large portion of the work in Arts undertaken by the University. For details see the notes at the head of the outlines of work of the various departments of study, elsewhere in this Calendar, and also the calendars issued by St. Boniface, St. John's and Wesley Colleges. Instruction in the remaining subjects of the course in Medicine not enumerated above is offered by Manitoba Medical College. Instruction in Law is not given directly by the University, but in a Law School under the joint auspices of the Law Society of Manitoba and the University. Instruction in Agriculture is given in the Manitoba Agricultural College in affiliation with the University.

ADMINISTRATIVE STAFF, 1919-1920

JAMES A. MACLEAN, B.A., Ph.D., LL.D	*President*
W. J. SPENCE, B.A	*Registrar*
R. H. SHANKS	*Secretary of Land Board and Accountant*
W. B. H. TEAKLES, B.A	*Assistant Registrar*
FRANK E. NUTTALL, M.A	*Librarian*
MISS H. N. MACVICAR	*Assistant to Registrar*
MRS. JAMES DUNCAN	*Assistant to Registrar*
MISS LILLIAN COOK	*Assistant to Registrar*
MISS MABEL NASH	*Faculty Stenographer*
COLIN F. BLACK, B.A	*Assistant to Registrar*
S. K. FORDE	*Assistant Accountant*
MISS GRACE LITTLE, B.A	*Assistant in the Library*
MISS JESSIE A. FALCONER	*Assistant in Library*
JAMES CHALK	*Janitor, Arts Building*
JOHN RAYSON	*Janitor, Arts Building*
ANDREW P. COX	*Janitor, Science Building*
HARRY PLANK	*Janitor, Science Building*
T. R. WATTS	*Janitor, Engineering Building*

UNIVERSITY EXAMINERS, 1918-1919

ARTS AND SCIENCE

Classics: Professors Coombes, Clark and Jolliffe, Rev. J. W. Matheson (St. John's), Miss Bissett, Professor Johnson (Wesley), Rev. G. Longpré (St. Boniface), Rev. L. Roy (St. Boniface).

Biblical Greek: Rev. Dr. Riddell (Wesley), Rev. Dr. Baird (Manitoba), Rev. J. W. Matheson (St. John's).

Hebrew: Rev. Dr. Stewart (Wesley), Rev. Dr. Perry (Manitoba), Rev. J. W. Matheson (St. John's).

Scripture: Rev. Dr. Perry (Manitoba), Rev. J. W. Matheson (St. John's), Rev. Dr. Stewart (Wesley).

English: Professor Crawford, Professor Allison (Wesley), Rev. E. A. W. Gill (St. John's), Assistant Professor Perry, Assistant Professor Durkin, Miss Ada E. Turner (Wesley), Rev. J. Monaghan (St. Boniface).

French: Professor Osborne, Assistant Professor Muller, Mr. A. D. Baker (St. John's,) Miss C. F. Armstrong (Wesley), Rev. O. Beaulieu (St. Boniface.)

German: Professor Heinzelmann, Mr. A. D. Baker (St. John's), Miss C. F. Armstrong (Wesley).

Icelandic: Professor Johnson (Wesley), Rev. R. Marteinsson.

Philosophy: Rev. Dr. Baird (Manitoba), Rev. Dr. Elliott (Wesley), Rev. Dr. Fleming (Manitoba), Mr. W. A. Corbett, Rev. J. F. Cross (St. John's), Rev. P. Bournival (St. Boniface).

Political Economy: Professor Clark (Mr. E. S. Everall alternate), Rev. Dr. Elliott (Wesley), Rev. J. F. Cross (St. John's), Miss Lily A. McCullough, Rev. P. Bleau (St. Boniface).

History: Professor Martin, Professor Harvey (Wesley), Rev. E. A. W. Gill (St. John's), Mr. Macdonald, Rev. O. Beaulieu (St. Boniface), Rev. J. Monaghan (St. Boniface), Miss Ada E. Turner (Wesley).

Mathematics and Astronomy: Professor Warren, Rev. J. F. Cross (St. John's), Dr. Kingston, Assistant Professor Tier, Rev. P. Bleau (St. Boniface), Mr. G. H. Herriot, Mr. O. T. Anderson (Wesley).

Physics: Professor Allen, Rev. J. F. Cross (St. John's), Dr. McClung, Mr. O. T. Anderson (Wesley), Mr. Cameron.

Botany: Professor Buller, Mr. Lowe.

Geology and Mineralogy: Professor Wallace: Assistant Professor De Lury

Chemistry: Professor Parker, Dr. Armes.

Physiology: Professor Vincent, Dr. Webster.

Zoology: Professor O'Donoghue, Professor Buller.

Natural Sciences (Latin Philosophy Course): Rev. G. Féré, Professor Parker.

ENGINEERING AND ARCHITECTURE

Mathematics: Professor Warren, Dr. Kingston, Assistant Professor Tier, Mr. G. H. Herriot.

Physics: Professor Allen, Dr. McClung, Mr. Cameron.

Chemistry: Professor Parker, Dr. Armes.

Engineering: Assistant Professor Johnstone, Assistant Professor Moffatt, Mr. Herriot.

Architecture: Professor Stoughton, Assistant Professor Johnstone.

MEDICINE

Chemistry: Professor Parker, Dr. Armes.

Zoology: Professor O'Donoghue, Professor Buller.

Physiology: Professor Vincent, Dr. Webster.

Histology: Professor Boyd, Dr. E. J. Boardman.

Pathology: Professor Boyd, Professor Bell.

Bacteriology: Professor Bell, Dr. W. J. Sharman.

Anatomy (Theoretical): Professor Gibson, Dr. J. A. Gorrell.

Anatomy (Practical): Professor Gibson, Dr. F. L. McKinnon, Dr. W. W. Musgrove, Dr. J. D. McEachern.

Clinical Anatomy: Dr. J. E. Coulter, Dr. Hugh Mackay.

Therapeutics and Materia Medica: Dr. A. J. Burridge, Dr. J. A. Hamilton.

Medical Jurisprudence: Dr. T. Glen Hamilton, Dr. J. A. McArthur.

Sanitary Science: Dr. A. J. Douglas, Dr. M. S. Fraser.

Theoretical Medicine (Fifth Year): Dr. E. S. Moorhead, Dr. F. G. Hart.

Theoretical Medicine (Fourth Year): Dr. C. R. Gilmour, Dr. J. H. O'Neill.

Clinical Medicine (Fifth Year): Dr. E. W. Montgomery, Dr. J. R. Davidson, Dr. Wm. Rogers.

Clinical Medicine (Fourth Year): Dr. E. S. Popham, Dr. W. H. Secord, Dr. A. W. Moody.

Theoretical Surgery (Fifth Year): Dr. James McKenty, Dr. W. R. Nichols.

Theoretical Surgery (Fourth Year): Dr. J. O. Todd, Dr. G. O. Fahrni.

Clinical Surgery (Fifth Year): Dr. J. Halpenny, Dr. J. E. Lehmann, Dr. R. J. Blanchard.

Clinical Surgery (Fourth Year): Dr. G. Hiebert, Dr. B. J. Brandson, Dr. A. A. Murray.

Obstetrics and Pediatrics (Fourth Year): Dr. D. H. McCalman, Dr. C. C. Field.

Obstetrics (Fifth Year): Dr. O. Bjornson, Dr. W. G. Campbell.

Gynaecology: Dr. A. M. Campbell, Dr. A. W. Allum.

Ophthalmology and Otology: Dr. S. W. Prowse, Dr. G. W. Fletcher, Dr. J. Stefansson.

Operative Surgery: Dr. S. J. Elkin, Dr. N. K. McIvor.

C. M. Degree: Dr. N. J. Maclean, Dr. H. C. Cunningham.

PHARMACY

Chemistry: Professor Parker, Dr. Armes.

Botany: Professor Buller, Mr. Lowe.

Physics: Professor Allen, Dr. McClung.

Mineralogy: Professor Wallace, Assistant Professor De Lury.

Bio-Chemistry: Professor Vincent, Dr. Webster.

Pharmacy: Professor Bletcher, Mr. E. Nesbitt (Winnipeg).

AGRICULTURE

English: Professor Sproule, Mr. Hopper, Mr. Murchie.

Chemistry: Dr. Shipley, Mr. Bjarnason.

Botany: Professor Jackson.

Bacteriology: Professor C. H. Lee.

Horticulture and Entomology: Professor Brodrick, Mr. Mithhener.

Physics: Professor S. C. Lee

Mathematics: Mr. Reynolds.

Engineering, Drawing and Farm Sanitation: Professor Smith, Mr. Shanks, Mr. Robson.

Economics and Rural Sociology: Professor Benton, Mr. Murchie.

Animal Husbandry: Professor Wood, Mr. MacMillan.

Field Husbandry: Professor Harrison, Mr. Southworth, Mr. Wiener.

Poultry: Professor Herner.

Dairy Husbandry: Professor Brown, Mr. James.

Pedagogy: Professor C. H. Lee.

History: Mr. Murchie.

HOME ECONOMICS

Foods, Dietetics, etc.: Miss H. M. Gowsell, Miss M. L. Kelso.

Clothing, History of Costume, Etc.: Miss Clara Groff, Miss Eleanor McFadden.

History of Home Life: Miss Bernice Wright.

Art and Home Furnishing: Mrs. J. South.

MATRICULATION for ARTS or SCIENCE

Subjects of Examination

All students desiring to enter upon a course in Arts or Science must pass an examination in the following subjects:

1. English.
2. History.
3. Mathematics.
4. Latin, *or* Greek, *or* French, *or* German.
5. A language not already taken in "4" above*, *or* two sciences from the following list: Physics, †Chemistry, Botany, †Physical Geography.
6. A language not already taken in "4," or "5," *or* *two sciences not already taken in "5," *or* one science not already taken in "5" with one of the following: †Home Economics, †Industrial Arts, †Music, †Agriculture , †Commercial Work.

Division of Examination into Stages

The subjects of this curriculum of studies may be taken at any regular examination, at one time, or may be divided into two parts as below, which may be taken at successive examinations. The parts must, however, be taken in the order as here given:

PART I—English Grammar, British History, General History (Ancient and Mediaeval), Arithmetic, Botany (if elected), Physics (if elected).

PART II—English Literature, Rhetoric and Composition, General History (Modern), Algebra, Geometry, the language or languages elected, Chemistry (if elected), Physical Geography (if elected), Home Economics (if elected), Industrial Arts (if elected), Music (if elected), Agriculture (if elected), Commercial Work (if elected).

Examination by Subjects

Candidates who are not prepared to write on the full course may offer them selves at any regular examination in the whole of any subject or subjects of *both* parts of this programme, such as all the English, or all the Mathematics, etc., and on passing a satisfactory examination they shall receive credit therefor; but no such candidate taking the examination according to subjects shall be allowed to proceed with the First Year until he has been examined in all the subjects and has satisfied the examiners in all save one subject.

Standing Required

To each of the papers of the Matriculation Examination one hundred marks are assigned.

A candidate, in order to pass in any paper in English, must have 50 per cent. in that paper. To pass in any other paper a candidate must have 40 per cent. of the marks in that paper. To obtain Second Class standing he must have 50 per cent. or more on the aggregate of the required papers. To obtain First Class standing, grade B, he must have 67 per cent. or more on the aggregate of the required papers. To obtain First Class standing, grade A, he must have 80 per cent. or more on the aggregate of the required papers. A standing under 50 per cent. is graded as Third Class.

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* For the language in "5" or "6" above, the student is permitted to elect either Icelandic or Swedish, and to present in lieu of examination therein; in the case of Icelandic, a certificate of having adequately prepared the prescribed course of study in Jon Bjarnason Academy, or an affiliated college of the University, from the authorities of the institution; in the case of Swedish, a certificate of having adequately prepared the prescribed course of study in Brandon College, or an affiliated college of the University, from the authorities of the institution.

† For details of course see "Program of Studies" issued by the Department of Education.

The same minimum percentages are used in determining a candidate's standing in an individual subject as upon the whole examination.

Candidates taking the examination by subjects, in order to secure any credit, are required to pass in half the papers they select and to attain an average standing of 40 per cent. on all the papers they select.

Supplemental Examinations

Candidates who fail in not more than two papers of Part I. Matriculation or Part II. Matriculation, receive standing on the examination but are required to take a supplemental examination in the papers in which they have failed.

Candidates who fail in more than two papers of Part I. Matriculation, or Part II. Matriculation, are required to take the whole examination again.

Supplemental examinations granted a candidate at a Part I. Matriculation examination may be taken when that candidate is writing on the Part II. Matriculation examination without additional fee.

Candidates, writing on Parts I. and II. Matriculation at the same examination, who fail in not more than three papers, receive standing on the examination but are required to take a supplemental examination in the papers in which they have failed.

Candidates, writing on Parts I. and II. Matriculation at the same examination, who fail in more than three papers, are required to take the whole examination again.

Candidates, taking the examination by stages and candidates writing upon the whole examination at one time, who have failed in not more than two papers, or who, having failed in three papers, have subsequently reduced the number of their conditions to two, and candidates taking the examination by subjects, who have been examined in all the subjects and have fully satisfied the examiners in all save one subject, may, as conditioned students, offer themselves for the examination of the First Year; but such conditions must in each case be removed before the commencement of the Second Year.

A student failing at a Matriculation Examination for Arts or Science will not be required to repeat at a subsequent examination any paper or papers in which he has obtained at least 60 per cent. Such a student must, of course, bring himself within the ordinary requirements as to removal of conditions, as outlined in the last preceding paragraph, before being admitted to the First Year.

The time allowed for each paper of the Matriculation Examination is three hours.

The Matriculation Examination is held twice in each year, viz., in June and in September. The June examination is conducted by the Department of Education, along with its Teachers' and other examinations, but University standards and regulations as set forth above are in force. Part I. Matriculation candidates will take the General History (Ancient and Mediaeval) as for Grade IX. of the Department of Education's course for High Schools, and the remaining subjects as for Grade X. Part II. Matriculation candidates will take the subjects required by the University as for Grade XI. of the Department of Education. The

June examination will be given at local centres, as arranged by the Department of Education. The September examination will be conducted by the University itself, and will be held only at the University in Winnipeg. Supplemental examinations may be arranged locally in September on special request and where satisfactory provision for supervision can be made.

PART I. (Grades IX. and X.)

ENGLISH AND HISTORY

Grammar—Lang: Intermediate English Grammar.

History and Civics—Wrong's British Nation. Botsford: A Brief History of the World. Parts I. and II. Ancient and Mediaeval Periods.

The English and History papers will be examined for spelling, and the examiners will include in their report a statement of the standing of each candidate in this regard. Students found deficient in this respect will be required to pass an examination in dictation before proceeding with their course.

Equivalents for French-speaking Students.

Grammaire—Ragon: Grammaire Française. (Cours Moyen.)

Histoire—Drioux: Histoire d'Angleterre. Bourgeois: Histoire du Canada.

MATHEMATICS

Arithmetic and Mensuration—The examination will test the candidate's knowledge of the ordinary arithmetical processes and his power to apply his knowledge to the commercial, industrial, agricultural, domestic and scientific problems of ordinary life. Dominion High School Arithmetic (W. J. Gage & Co.).

ELEMENTARY SCIENCE—BOTANY

Bailey, Beginners' Botany (revised edition by B. J. Hales); Hales, Western Flora. Structure, function and ecology of plants. The texts may be obtained separately or combined in one volume.

An adequate study of the common plants of the following orders, with a view to the understanding of plant classification; ranunculaceæ, luguminosæ, cruciferæ, rosaceæ, lilaceæ and compositæ. Students are expected to so familiarize themselves with the distinguishing characters of the above orders as to readily identify individual members. It is also expected that students will be given sufficient practice in expressing botanical observations, by means of diagrams, oral and written work, and by the mounting of a few specimen plants. Candidates will be allowed the use of a key for a portion of the examination.

N.B.—Plants will be submitted to candidates for description and identification at the examination.

ELEMENTARY SCIENCE—PHYSICS

Grade IX.

Mann and Twiss, Part I., Chapters I. to V. The following experiments based on the text are recommended:

1. Density of solid from calculation of volume and weight.
2. Density of solid by immersion and weight.
3. Density of liquid using S. G. bottle or hydrometer.

4. Effects of force, gravity, inertia, momentum, kinetic energy.
5. Efficiency of a system of pulleys.
6. Forces acting on lever.
7. Measurements of moments.
8. Centre of gravity of rod or lamina.
9. (*a*) Verification of laws of stable and unstable equilibrium.
9. (*b*) Efficiency of wheel and axle.
10. Mechanical advantage of given screw with handle.
11. Mechanical disadvantage of given bicycle.
12. Verification of parallelogram of forces.
13. Pressure is proportional to depth, multiplied by density. Pressure is equal in all directions and is independent of size and shape of containing vessel.
14. Measurement of gas pressure—in city mains or compressed air in bottle.
15. Relative density of liquids using balancing columns of liquids.
16. Verification of Boyle's law.
17. Make and use siphon.
18. Construction of barometer and calculation of air pressure in lbs. per sq. inch or gms. per sq. cm.
19. Prove air to have weight, using Air Pump and Globe, or flask and boiling water.
20. Use of Force Pump and Lift Pump deducing direction of flow at each stroke from position of valves.
21. Use Force Pump with and without air chamber to give steady flow.
22. Verification of Archimedes' Principle.
23. Specific gravity by Archimedes' Principle of solid
    (*a*) Lighter than water.
    (*b*) Heavier than water
24. Construct a small windmill and study cause of its motion.

Grade X.

Mann and Twiss, Part I., from Chapter VI. to the end. The following experiments, based on the text, are recommended:

Heat.

1. Expansion of solids, liquids and gases.
2. Convection. Study ventilation of building.
3. Comparison of conductivities of rods of different materials.
4. Comparison of properties of white and black surfaces with regard to reflection, radiation and absorption of heat.
5. Observations on effect of heat on cold water whilst being raised to boiling point.
6. Distillation of water.
7. Separation of water and alcohol by distillation.
8. Latent heat of fusion of ice.
9. Cooling curve of naphthalene moth-balls to find melting point.
10. Latent heat of steam.
11. Specific heat of a metal.
12. Experiments to show absorption of heat in evaporation.
13. Verification of relation between boiling point and pressure.
14. Produce heat by doing work. Use heat to do work.
15. Compare efficiencies of two burners or alcohol lamps.

Sound.

16. Pitch is proportional to the number of vibrations per second.
17. Propagation of sounds in solids in air, not in vacuum.
18. Calculation of velocity of sound from echo.
19. Conversion of sound into visible vibrations.
20. Effect of length of string and tension on pitch.
21. Produce the phenomenon known as "beats."
22. Verify the relation between length of open and closed pipes and their pitch.

Light.

23. Rectilinear propagation. Pinhole camera.
24. Path of light through slab of glass. (Pin method.)
25. Path of light through prism. (Pin method.)
26. Path of light through lens. (Pin method.)
27. Focal lengths compared.
28. Conjugate foci.
29. Simple microscope and astronomical telescope.
30. Angles of reflection and incidence compared.
31. Position of object and image in plane mirror.
32. Verification of inverse square law and photometry.
33. Analysis of white light and comparison of refrangibilities of rays of different colors.
34. Synthesis of white light.
35. Selective absorption illustrated.
36. Diffusion of light in reflection and transmission.
37. Comparison of the speed of light in air with its speed in glass.

Magnetism.

38. Find properties of bar magnet. Make blue print chart of lines of force.
39. Verification of properties of suspended magnet with regard to other magnets and earth. (Compass and dip needle.)

Electricity.

40. Construct the following cells:
    (*a*) Simple. Polarisation to be observed.
41. (*b*) Gravity.
42. (*c*) Leblanche.
43. Action of current on magnetic needle.
44. Conductors and non-conductors.
45. Solenoid—lines of force.
46. Solenoid with cores of soft iron.
47. Action of needle. Lines of force.
48. Retentivity—comparison of permanent and electro magnets.
49. Resistance, heat, reduced current, shown by galvanometer.
50. Electric bell.
51. Electric telegraph.
52. Comparison of E. M. F. of cells of different types. Cells in series and parallel.
53. Motor—direct current.
54. Induced currents by magnet. Verification of Lenz's Law.

55. Induced currents by currents.
56. Dynamo—Alternating.
57. Dynamo—Direct and Motor alternating to be used.
58. Induction coil, construction and use.
59. Telephone to be taken apart and put together and used.
60. Electroplating of cent with silver.
61. Use of Ammeter and Voltmeter to verify ohms law.
62. Construction of a one ohm resistance coil.
63. Use of coil to measure unknown resistance.
64. Resistance of lamps in parallel and series.
65. E. M. F. of cells in parallel and series.
66. Measure watts consumed by small motor, electric lamp or electrolytic cells.

PART II. (Grade XI.)

(Although the examination in these subjects is given at the end of Grade XI , the work of preparation extends in most cases over the full three years of the High School course. For the convenience of teachers, a suggested program of work for Grades IX. and X. is included below. For fuller details see "Program of Studies" issued by the Department of Education).

ENGLISH AND HISTORY

Grades IX. and X.

Composition—High School Composition : Western Canada Series (Copp Clark Co.)

The course will include the following:

(*a*) The formal rhetorical study of the sentence and the paragraph along the lines of the text-book indicated.

(*b*) Frequent practice in composition of a simple character, based on personal experiences, everyday events and objects and themes drawn from prescribed literature, reporting and editorials, letter writing, social and business. Attention to correct mechanical form will be demanded.

The following text is prescribed as affording models of style and material for work in composition. A general knowledge of its contents is required.

1920. Scott: Ivanhoe.

Literature—A careful study of the following texts: Narrative and Lyric Poems, Second Series (Copp Clark Co.) pages 64-131 inclusive. Tennyson: Gareth and Lynette, The Passing of Arthur.

Grade XI.

1. **Composition**—High School Composition: Western Canada Series (Copp Clark Co.)

The examination will presuppose the following:

(*a*) The formal rhetorical study of the sentence, the paragraph, the whole composition, and the word along the lines of the text-book indicated; a study of the qualities of style.

(*b*) Frequent practice in formal essay work, based on current events prescribed literature, etc.; debating, class criticism.

2. **Literature**—Intelligent comprehension of the prescribed texts, and familiarity with their content will be required, and the candidate will be expected to have memorized some of the finest passages.

1920. Shakespeare: Julius Caesar, The Tempest. The following selections from Alexander's Anthology (Copp-Clark & Co.): Milton: On His Blindness, Introduction to Paradise Lost, Book III.; Gray: Elegy; Goldsmith: Selection from The Deserted Village; Burns; The Farewell; Wordsworth: The Solitary Reaper, To a Skylark, To the Cuckoo, To the Daisy, The Green Linnet, It Is not to Be Thought of, Inside of King's College Chapel; Byron: The Eve of Waterloo, The Isles of Greece; Shelley: The Cloud, To a Skylark, Ode to the West Wind; Tennyson: The Splendor Falls, The Lady of Shalott, Morte d'Arthur, Of Old Sat Freedom, St. Agnes' Eve, In Memoriam (XXVII., CXIII., CXV.); Keats: Ode to Autumn, On First Looking into Chapman's Homer; Lampman: Heat, Winter Uplands. Burke: Conciliation with America. Nettleton, Specimens of the Short Story (Holt).

The Literature examination will be confined to the Shakespeare and lyrics prescribed. The prose may be used to provide material for essay work. Some of the essay themes set will be drawn from it.

3. **General History**—Botsford: A Brief History of the World, Book III., The Modern World.

The English papers will be examined for spelling, and the examiners will include in their report a statement of the standing of each candidate in this regard. Students found deficient in this respect will be required to pass an examination in dictation before proceeding with their course.

Equivalents for French-speaking Students

Grades IX. and X.

Composition—Un essai sur un de plusieurs sujets indiqués par les examinateurs. L'écriture devra être lisible, l'orthographe et la ponctuation correctes, et la construction des phrases soignée. Il faudra aussi faire attention au plan général de la composition, à l'ordonnance des idées, et à la propriété des termes. Sa valeur dépendra plutôt de la qualité que de la quantité.

1920. *Modèles Francais*—Procès, Tomes II. et III. Poésie—Viennet, Tome II., pp. 382-333. Andrieux, Tome III., pp. 283-288. Nodier, Tome III., pp. 385-389. Barbier, Tome III., pp. 558-561. Prose—Molière, Tome II., pp. 51-84.

1920. *Auteurs*—Daudet: La Belle Nivernaise. Moreau: La Souris Blanche.

Grade XI.

Au lieu de l'Anglais ci-dessus le Français pour les candidates de langue française sera comme suit:

1. **Rhétorique et Composition**—

(*a*) Vérest: Manuel de Littérature. Principes généraux, style, versification, pp. 1-12, 53-171; débit, pp. 188-205; genres intermédiaires en poésie, pp. 499-517.

(*b*) Un essai d'à peu près deux pages, grand format, sur un des sujets indiqués par les examinateurs. L'écriture devra être lisible, l'orthographe et la ponctuation correctes, et la construction des phrases soignée. Il faudra aussi faire attention au plan général de la composition, à l'ordonnance des idées, et à la propriété des termes. Sa valeur dépendra plutôt de la qualité que de la quantité. On allouera 25 per cent. pour les principes de littérature et 75 per cent. pour l'essai.

2. Littérature—

1920. *Modèles Francais:* Procès, Tomes II. et III. *Extraits en prose* X. de Maistre (II. pp. 327-341), A. Daudet (II. pp. 604-609, et III. pp. 679-683). *Extraits poétiques:* Brizeux (II. pp. 503-510, et III. 533-542), Delavigne (II. pp. 435-449, et III. pp. 430-434), Coppée (II. pp. 609-621, et III pp. 688-692), Corneille (III. pp. 17-29).

Auteurs: Veuillot: Corbin et d'Aubecourt. Racine: Les Plaideurs.

MATHEMATICS

Grades IX. and X.

Algebra and Geometry—Crawford's Algebra (Western Canada Series), Chapters I. to XV. inclusive, and simple graphs. Baker's Theoretical Geometry for Schools, to page 72. *In the demonstration of theorems the starting point shall be the definitions given in the prescribed texts.*

Grade XI.

1. **Algebra**—Crawford's Algebra (Western Canada Series), review of Chapters I. to XV., and Chapters XVI to XXV. inclusive.

2. **Geometry**—Baker's Theoretical Geometry for Schools to page 206.

In demonstrating a proposition whose proof is given in the prescribed text no use shall be made of a proposition which in the said text follows the required proposition.

In the demonstration of theorems the starting point shall be the definitions given in the prescribed texts.

LATIN

Grades IX. and X.

Robertson and Carruthers: Latin Lessons for Beginners. Easy continuous prose. Pages 1-244 of the Grammar should be completed.

Grade XI.

Translation into English of passages from prescribed texts.

Translation at sight (with the aid of vocabularies wherever necessary) of passages from some easy prose author. Candidates will be expected to have supplemented the reading of the prescribed texts by additional practice in the translation of Latin.

Grammatical questions on the passages from prescribed texts shall be set, and such other questions as arise naturally from the context.

Translation into Latin of easy sentences with the vocabulary based upon the prescribed Caesar.

The following are the prescribed texts:—Caesar: Bellum Gallicum, Book IV., Chapter XX. to end, and Book V., Chapters I. to XXIII inclusive.

Ovid: The following selections from Gleason's "A Term of Ovid"—Atalanta's Race, Death of Orpheus, Touch of Gold.

Collateral Reading: It is recommended that each school provide the following books for reference in connection with the authors read: For the Caesar, Holmes' "Caesar's Conquest of Gaul" (Macmillan & Co., smaller edition); for the Ovid, Gayley's "Classical Myths in English Literature" (Ginn & Co.).

Two papers as follows:—(*a*) Caesar, Ovid and Sight (25 per cent. of the marks on this paper will be for Sight Translation). (*b*) Latin Grammar and Composition. Robertson and Carruthers' Latin Lessons for Beginners should be completed.

GREEK

Grades IX. and X.

White: First Greek Book (Copp Clark), Exercises 1 to 50, inclusive, pages 1 to 124.

Grade XI.

Translation into English of passages from prescribed texts.

Translation at sight (with the aid of vocabularies wherever necessary) of passages from some easy prose author. Candidates will be expected to have supplemented the reading of the prescribed texts by additional practice in the translation of Greek.

Grammatical questions on the passages from prescribed texts shall be set, and such other questions as arise naturally from the context.

Translation into Greek of easy sentences with the vocabulary, based upon the prescribed Xenophon.

The following is the prescribed text: Xenophon, Anabasis I., Chapters 1-8.

For 1920 two papers as follows: (*a*) Xenophon and Sight (25 per cent. of the marks given on this paper will be given for sight translation). (*b*) Greek Grammar and Composition (White's First Greek Book).

FRENCH

Grade IX.

A study of Chapuzet and Daniels' Mes Premiers Pas en Français, (Heath & Co.), the work in the text to be preceded by and associated with a thorough drill in phonetics. Special attention should be given to reading, memorizing and conversation.

Grade X.

(*a*) **Grammar.**—New High School French Grammar (Fraser and Squair), pages 1 to 115 and Lesson L. Muller's Short Theory of the Conjugation of the French Verb (Copp-Clark).

(*b*) **Composition**—Translation of sentences and easy passages from English into French.

(*c*) **Translation**—It is expected that considerable attention will have been given to practice in reading*, and conversation and that special emphasis will be laid on retranslation, based upon François, Easy French Reading (Holt).

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* As a guide to pronunciation it is recommended that students use "Essentials of French Pronunciation," 1916 edition (Copp, Clark Co.)

Grade XI.

1. (*a*) **Grammar**—New High School French Grammar (Fraser & Squair), chapters 1 to 51 inclusive, and the irregular verbs. Muller's Short Theory of the Conjugation of the French Verb (Copp-Clark).

(*b*) **Composition.**—(1) Translation into French of short sentences as a test of the candidate's knowledge of grammatical forms and structure, and the formation in French of sentences of similar character; and (2) translation of easy passages from English into French.

(*c*) **Sight Translation.**—Translation of unspecified passages from easy French authors.

2. **Authors.**—An examination on the following texts:

1920. Labiche: Le voyage de M. Perrichon ((Ginn). La France Héroique (Episodes de la grande Guerre) (Heath).

English Equivalents for French-speaking Students

Au lieu du Français ci-dessus l'Anglais pour les candidats de langue française sera comme suit:

Grades IX. and X.

Dulac et Bonnet, Grammaire Anglaise, pages 1 à 164.

Grade XI.

1. (*a*) **Grammaire.**—Dulac et Bonnet, Grammaire Anglaise, pages 165 à 284.

(*b*) **Composition.**—(1) Traduire du français en anglais quelques phrases assez courtes, qui montrent que le candidat sait appliquer les règles de la grammaire; construire quelques phrases anglaises du même genre. (2) Traduire en anglais quelques passages faciles de prose française.

2. **Auteurs.**—Version tirée d'auteurs anglais faciles à comprendre et non connus d'avance. Examen sur les auteurs prescrits: Dickens—A Christmas Carol. Irving—Sketch Book. (Hachette).

GERMAN

Grades IX. and X.

(*a*) **Grammar**—High School German Grammar (Van der Smissen and Fraser, revised edition), pages 1 to 133.

(*b*) **Composition**—Translation of sentences and easy passages from English into German.

(*c*) **Translation**—Translation of unspecified passages from easy German authors. In this connection students are expected to have had considerable practice in reading, conversation and easy retranslation. Guerber, Märchen und Erzählungen (Heath) will furnish material.

Grade XI.

1. (*a*) **Grammar**—High School German Grammar (Van der Smissen & Fraser, revised edition), pages 1 to 181.

(*b*) **Composition.**—(1) Translation into German of short English sentences as a test of the candidate's knowledge of grammatical forms and structure, and the formation in German of sentences of similar character; and (2) translation of easy passages from English into German.

(*c*) **Sight Translation.**—Translation of unspecified passages from easy German authors.

2. Authors.—An examination on the following texts:

1920. Hauff: Das Kalte Herz. Benedix: Der Prozess (Copp Clark).

ICELANDIC

Grades IX. and X.

(*a*) **Grammar**—Jón Olafsson's Móðurmáls-bókin.

(*b*) **Composition**—Translation of easy passages from English into Icelandic and from Icelandic into English. Dictation and orthographical exercises. Construction of sentences to show grammatical forms. Reproduction of stories and original composition.

(*c*) **Literature**—Icelandic Folk-tales: Utilegumannasögur (The Outlaws). Skólaljóð.

N.B.—The following is suggested for the work of Grade IX. in the High School:

Grammar composition and sight reading. Elementary reproduction of stories. Translation of easy Icelandic passages into English. Exercises in orthography. Text: Lesbók III.

Grade XI.

1. (*a*) **Grammar.**

(*b*) **Composition.**—(1) Translation into Icelandic of idiomatic expressions and phrases in English. Construction of sentences in Icelandic as a test of knowledge of grammatical forms and structure: (2) Sight translation of passages from Icelandic into English. Drill in orthography. Essays.

2. Authors.

1920. Melsted's Anthology of Modern Icelandic Literature. Sýnisbók islenzkra bókmenta.

SWEDISH.

Grade IX.

(*a*) Sundins Svensk språklära to the end of Etymology; easy syntax.

(*b*) Easy selections from modern authors (Folkskolans läsebok, Parts I. and II.).

(*c*) Svensk rättskrivningslära (Wilh. Sturgen-Becker).

Grade X.

(*a*) Sundins Svensk språklära is completed.

(*b*) Translation of easy passages from English into Swedish and from Swedish into English.

(*c*) Reproduction of stories and original composition.

(*d*) Selections from modern authors (Folkskolans läsebok, Parts III. and IV.).

Grade XI.

1. (*a*) Beckman's Advanced Swedish Grammar

(*b*) Translation from Swedish into English and from English into Swedish of idiomatic expressions.

(*c*) Writing of short essays.

2. **Authors.**—Translation of selected passages from modern authors; rapid reading; critical study of some masterpiece.

Examination on the following texts:

A. M. Lengren, Pojkarna, Porträtterna, Fröken Juliana; *P. Vikner*, Min moders testamente; *B. E. Malstrom*, Angelika, Vi suckar det så tungt uti skogen?; *Esaias Tegnér*, Flyttfåglarna, Sang till solen, Fridsröster; *Z. Topelius*, Min moder, Vintergatan; *J. L. Runeberg*, Till et fågel, Morgonen, Julkvällen, Soldatgossen, Torparflickan; *Karl XV.*, Hjärtats hem; *Oscar II.*, Ostersjön; *E. Snoilsky*, På Värnamo marknad, Ericsson och Monitor; *G. Froding*, Vallarelåt, Jan Ersa ock Per Persa; *C. D. af Wirsén*, Sikars brunn, Källan, Pelarskogen i San Paolo; *E. Sehlstedt*, Snösparven, Våren kommer, Norrlänningens hemlängtan.

MATRICULATION FOR MEDICINE

All students desiring to enter upon a course in Medicine must pass a Junior and a Senior Matriculation examination. For the present, only the subjects of the Junior Matriculation examination for Medicine are taught in the high schools, collegiate institutes and preparatory schools. Instruction in the subjects of Senior Matriculation for Medicine is given in the University and its affiliated colleges.

Subjects of Junior Matriculation Examination

All candidates at the Junior Matriculation Examination for Medicine must take the following fixed subjects: English, History, Mathematics (Arithmetic, Algebra and Geometry), Latin, Elementary Science (Botany and Physics), and one of the following optional subjects: French, German.

Division of Examination

The subjects enumerated above may be taken in one examination at one time, or in two parts, at successive examinations, as outlined for Arts Matriculation, or they may be taken subject by subject, or by groups of subjects, as in the case of Arts Matriculation.

Scope of Work and Standing Required

In the case of each of the subjects of this examination the work prescribed is the same as that for the corresponding subjects of Parts I. and II. of the Arts Matriculation Examination, and the same standard is required to entitle the candidate to pass. The same general regulations apply. See pages 21 and 22.

Accuracy in Spelling is required. Students found deficient in this respect will be required to pass an examination in dictation before they will be allowed to proceed with their course.

Supplemental Examinations

The same regulations respecting Supplemental Examinations prevail as in the case of Arts Matriculation, *except that only fully matriculated students are allowed to proceed with the work of the First Year in Medicine.*

Time of Junior Matriculation Examination

The Junior Matriculation Examination for Medicine is held twice in each year, viz., in June and in September. The June examination is conducted by the Department of Education as in the case of that for Arts Matriculation. See page 22.

Equivalent Examinations

In place of the above Junior Matriculation Examination the University has agreed to accept the Matriculation of the College of Physicians and Surgeons of the Provinces of Quebec and Ontario; the Medical Students' registration certificate of the Medical Council of Great Britain and Ireland.

Non-professional Second-Class Teachers' Certificates of Manitoba, Ontario, Saskatchewan, Alberta and British Columbia are recognized as equivalent to Junior Medical Matriculation in so far as the subjects covered are the same.

Holders of certificates of educational value from other institutions than those mentioned will receive such standing as the Council of the University may see fit to grant.

A Bachelor of Arts of any University in His Majesty's Dominions is admitted to the study of Medicine without further examination, provided he has covered work in Science equivalent in range and standard to that prescribed below for Senior Matriculation for Medicine.

Subjects of Senior Matriculation Examination

The subjects of the Senior Matriculation examination for Medicine are:

English: Courses 1, 2, 3, 4, or 5, 6, 7, 8, page 51.
Mathematics: Course 11, page 74*.
Physics: Courses 1, 2, and 3, 4, page 78.
Chemistry: Courses 1, 2, and 21, 22, page 83.
Botany: Courses 1, 2, and 3, 4, page 80.
Zoology: Courses 2, 4, page 89.

And *one* of—

Latin: Courses 1, 2, and 3, 4, page 48.
or French: Courses 5, 6, page 56.
or German: Courses 3, 4, and 5, 6, page 58.

The regulations and standards governing the Senior Matriculation for Medicine are in general the same as those governing the First Year in Arts or Science, for which see page 38 and elsewhere.

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* Course 1, page 73, may be substituted for Course 11 in the case of students not receiving instruction at the University.

MATRICULATION FOR ENGINEERING

All students desiring to enter upon a course in Engineering must pass a Junior and a Senior Matriculation examination for Engineering. For the present, only the subjects of the Junior Matriculation for Engineering are taught in the high schools, collegiate institutes and preparatory schools. Instruction in the subjects of Senior Matriculation for Engineering is given in the University and its affiliated colleges.

Subjects of Examination

All candidates at the Junior Matriculation Examination for Engineering take in regular course the following fixed subjects: English, History, Mathematics (Arithmetic, Algebra and Geometry), and two of the following optional subjects, one of which must be a language: Latin, Greek, French, German, Elementary Science (Botany and Physics or Botany and Chemistry), Mechanical Drawing and Shop Work.

Division of Examination

The subjects enumerated above are regularly taken in two parts, at successive examinations, according to the plan outlined below; or they may be taken subject by subject, or by groups of subjects, as in the case of Arts Matriculation.

PART I.

English, as for Part I., Arts Matriculation.

History, as for Part I., Arts Matriculation.

Mathematics, as for Part I., Arts Matriculation, with a minimum of 50 per cent. required.

Botany, as for Part I., Arts Matriculation.

Physics, as for Part I., Arts Matriculation.

PART II

English, as for Part II., Arts Matriculation.

History, as for Part II., Arts Matriculation.

Mathematics, as for Part II., Arts Matriculation, with a minimum of 50 per cent. required on each paper.

The optional language or languages selected, as for Part II., Arts Matriculation.

Chemistry. High School Chemistry, revised edition (Copp Clark) with laboratory work. A practical test is given at the time of the examination, to which twenty per cent. of the marks are allotted.

Mechanical Drawing, to be outlined.

Shop Work, to be outlined.

Accuracy in spelling is required. Students found deficient in this respect will be required to pass an examination in dictation before they will be allowed to proceed with their course.

Supplemental Examinations

The same regulations respecting Supplemental Examinations prevail as in the case of Arts Matriculation. See page 22.

Time of Junior Matriculation Examination.

The Junior Matriculation Examination for Engineering is held twice in each year, viz., in June and in September. The June Examination is conducted by the Department of Education as in the case of that for Arts Matriculation. See page 22.

Subjects of Senior Matriculation Examination

The subjects of the Senior Matriculation Examination for Engineering are:

English: Courses 1, 2, 3, 4, or 5, 6, 7, 8, page 51.

Mathematics: Courses 1, 4, 5, 6, 7, 10, page 73.

Chemistry: Courses 1, 2 and 21, 22, page 83.

Descriptive Geometry and Drawing; Courses 1, 2, and 3, 4, page 97.

and *one* of—

Latin: Courses 1, 2, and 3, 4, page 48.

or Greek: Courses 1, 2, or 5, 6, page 45.

or French: Courses 5, 6, page 56.

or German: Courses 3, 4, and 5, 6, page 58.

The regulations and standards governing the Senior Matriculation for Engineering are in general the same as those governing the First Year in Arts or Science, for which see page 38 and elsewhere, except that a minimum of 50 per cent. will be required in all papers in Mathematics.

MATRICULATION FOR ARCHITECTURE

In order to enter upon the course of study for the degree in Architecture, the student must pass a Matriculation examination, the subjects of which are the same as those required for Matriculation for Arts or Science. There is required in addition to the above a course in elementary drawing, including the use of instruments, projections and freehand work, of an amount equivalent to a course of eighty hours. Students who apply for admission without this extra requirement will be required to make it up during the First Year. In all other respects the same standards and regulations prevail as in the case of Arts or Science Matriculation.

MATRICULATION FOR LAW

In order to enter upon the course of study for the degree in Law, a student must pass a Junior Matriculation examination, the subjects of which are the same as those required for Matriculation for Arts or Science, except that Latin must be elected, and a Senior Matriculation examination, the subjects of which are the same as those required for the First Year in Arts, for which see page 38. The same standards and regulations prevail as in the case of Arts or Science Matriculation, and as in the case of First Year in Arts, respectively.

ENTRANCE REQUIREMENTS IN OTHER COURSES

Entrance requirements for the course in Pharmacy are outlined on pages 122-123, those for Agriculture on page 126, those for Home Economics on page 130, and those for Commercial Education on page 137.

CURRICULA IN ARTS

The University of Manitoba confers two degrees in Arts, viz., Bachelor of Arts (B.A.) and Master of Arts (M.A.). The following are the requisites for proceeding in course to admission to these degrees:

I.—BACHELOR OF ARTS

Matriculation

The requirements for Matriculation for Arts are set forth in detail on pages 21 to 32.

Undergraduate Course in Arts

After having matriculated, the student of Arts is required to pass four examinations before being admitted to the degree of Bachelor of Arts, viz., the First, the Second, the Third and the Fourth Year Examinations.

FIRST YEAR

The course of study in the First Year in Arts is made up of five subjects, to be selected on the following plan (each subject representing four lecture hours per week or their equivalent, a laboratory period of either two or three hours to count as one lecture hour):

1. English (Courses 5, 6, 7, 8, page 52).
2. Mathematics (Courses 1, 4, page 73).
3. A foreign language (already taken for Matriculation), either Latin (Courses 1, 2, 3, 4, page 48); or Greek (Courses 1, 2, 3, 4, page 45); or French (Courses 1, 2, 3, 4, pages 55-56); or German (Courses 3, 4, 5, 6, page 58).
4. Any *two* of the following* (the language already taken in 3 being barred): Latin (Courses 1, 2, 3, 4, page 48); Greek (Courses 1, 2 or 5, 6, page 45); Biblical Greek† (Courses 1, 2, page 47); French (Courses 1, 2, 3, 4, page 55-56); German Courses 3, 4, 5, 6, page 58); Elementary German‡ (Courses 1, 2, page 58); Hebrew (Courses 1, 2, page 50); Icelandic (Courses 1, 2, page 60); History (Courses 1, 2, page 67); §Mathematics (Courses 5, 6, 7, 10, page 73); Physics (Courses 1, 2, 3, 4, pages 78-79); Chemistry (Courses 1, 2, 21, 22, page 83-84).

N.B.—The subjects of the above curriculum will be grouped for timetable purposes by the University Faculty as follows, the groups being kept clear of conflicts with one another, but not necessarily the subjects within the groups: (a) English; (b) Mathematics (required); (c) Latin, Chemistry; (d) French, Icelandic, Hebrew; (e) German, Greek; (f) History, Mathematics (optional); (g) Physics.

The attention of students of the First Year in Arts is called to a voluntary course of lectures on the History of Art, given by the Professor of Architecture, one hour a week throughout the session. This course should be a valuable accessory to the required courses on literature and history. See page 108.

SECOND YEAR

The course of study in the Second Year in Arts is made up of five subjects, to be selected on the following plan (each subject, except History, representing four lecture hours per week or their equivalent, a laboratory period of either two or three hours to count as one lecture hour, and History being allotted three lecture hours per week):

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*A student who has not taken both Physics and Chemistry for Matriculation must elect one Science subject in either the First or the Second Year.

†This option is open only to those who have not taken Matriculation Greek.

‡This option is open only to those who have not taken Matriculation German.

§Students intending to take in their Third Year, Mathematics, or any division of the Natural and Physical Science involving Physics, are recommended to choose Mathematics as an option in First Year.

1. English (Courses 9, 10, 11, 12, pages 52-53).
2. History (Courses 3, 4, page 67).
3. A foreign language (already taken for Matriculation, and in the First Year), either Latin (Courses 5, 6, 7, 8, page 48); or Greek (Courses 5, 6, 7, 8, page 46); or French (Courses 7, 8, 9, 10, 11, 12, 13, 14, page 56); or German (Courses 7, 8, 9, 10, pages 58-59).
4. Any *two* full subjects* or their equivalent, from the following list, subject to the time-table and other limitations below (the language already taken in 3 above being barred): Latin (Courses 5, 6, 7, 8, page 48); Greek (Courses 3, 4, *or* 7, 8, page 46); Biblical Greek (Courses 3, 4, page 47); French (Courses 7, 8, 9, 10, 11, 12, 13, 14, page 56); German (Courses 7, 8, 9, 10, page 58-59); Hebrew (Courses 3, 4, page 50); Icelandic (Courses 5, 6, 7, 8, page 60); Psychology and History of Philosophy (Courses 1, 2, 1A, 2A, page 60); Economics (Courses 1, 2, page 69); Mathematics† (Course 13, 16, page 74); Astronomy, half-subject only (Courses 91, 92, page 76); Physics (Courses 1, 2, 3, 4, pages 78-79); Botany‡, half-subject only (Courses 1, 2, 3A, 4A, pages 80-81); Geology, half-subject only (Courses 1, 2, 3, 4, page 82); Chemistry‡ (Courses 1, 2, 21, 22, pages 83-84); Zoology, half-subject only (Courses 1, 2, 3, 4, page 89).

N.B.—The subjects of the above curriculum will be grouped for timetable purposes by the University Faculty as follows, the groups being kept clear of conflicts with one another, but not necessarily the subjects within the groups: (a) English; (b) History; (c) Latin, Physics; (d) French, Hebrew, Icelandic; (e) German, Greek, Geology with Astronomy; (f) Economics, Chemistry; (g) Psychology and History of Philosophy, Botany with Zoology, Mathematics.

The attention of students of the Second Year in Arts is called to a voluntary course of lectures on the History of Art, given by the Professor of Architecture, one hour a week, throughout the session. This course should be a valuable accessory to the required courses on literature and history. See page 108.

Students proceeding to the Latin Philosophy Course in St. Boniface College take a special Second Year Course outlined on pages 63 to 67.

* * *

A candidate, in order to pass in any paper at the examination of the First or the Second Year, must have 40 per cent. of the marks in that paper, and to pass the whole examination and obtain Third Class standing he must have 40 per cent. of the aggregate of the marks assigned and may not have failed on more than three full papers or their equivalent. If he fail to obtain 40 per cent., he shall be required to take the whole examination again. To obtain Second Class standing he must have 50 per cent. of the aggregate of the marks assigned. To obtain First Class standing, grade B, he must have 67 per cent. of the aggregate of the marks assigned. To obtain First Class standing, grade A, he must have 80 per cent. of the aggregate of the marks assigned.

The standing of a candidate on an individual subject is determined on the same basis as his standing on the whole examination.

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*A student who has not taken both Physics and Chemistry for Matriculation must elect one Science subject in either the First or the Second Year.

†Mathematics is a prerequisite for Divisions A and B of the course in Natural and Physical Science.

‡Chemistry, Botany and Zoology are prerequisites for Divisions D and E of the course in Natural and Physical Science.

Chemistry will be permitted as an option only in case it has not been taken in the First Year.

Candidates who have failures registered against them in not more than two full papers, or four half papers or their equivalent, in the examination of the First Year or the Second Year may, as conditioned students, proceed with their course, with a view to subsequently obtaining the full standing of the year; but all conditions from the examination of the First Year must be removed before the commencement of the Third Year, and all conditions from the examination of the Second Year must be removed before the commencement of the Fourth Year.

These regulations should be read in conjunction with the regulations relating to Supplemental Examinations. (See pages 140-143.)

A student passing the examination of the First Year with First Class grade "B" or higher standing, may obtain from the Department of Education for Manitoba a First Class non-professional Teacher's Certificate. A student passing with Second Class standing may obtain a Second Class non-professional certificate. In each case the applicant for a certificate must satisfy the requirements of the Department in Bookkeeping, Agriculture, Music, Drawing and Botany.

No student shall be allowed to present himself for examination in any subject of the First or Second Years in Arts unless he presents from the University Faculty a certificate of having attended 75 per cent. of the lectures delivered in said subject, or is recommended for the examination by an affiliated college. This regulation, however, shall not affect any extra-mural candidate for examination.

THIRD AND FOURTH YEARS

After completing the First and Second Years, a student may proceed to the degree of Bachelor of Arts by pursuing any one of the following Courses, viz.:

(a) A General Course. All students who elect the General Course must take two subjects from Group A below and one subject from each of Groups B, C and D:

Group A—English, French, German, Latin, Greek, Hebrew.
Group B—Philosophy, Political Economy and History.
Group C—Physics, Chemistry, Biology, Astronomy with Geology.
Group D—An additional subject from Group A, an additional subject from Group B, an additional subject from Group C, Mathematics, Scripture.

(b) A Group Course, made up on the following plan*: Any two *majors*, or a *major* and two *minors*†, from the following list—Classical Greek (major and minor), Biblical Greek (minor only), Latin (major and minor), Hebrew (major), English (major and minor), French (major and minor), German (major and minor), Philosophy (major and minor)‡, History (major only), Political Economy (major and minor), and Mathematics (major and minor)‡, Finance (minor in Fourth Year only).

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*Owing to the numerous combinations of subjects allowed in the Third and Fourth Years under the system of group courses it is impossible in the present length of the teaching week to make provision for all such combinations. The University, therefore, while endeavoring to provide for all the various courses selected by students, will, in drawing up the time-table, have regard especially to the avoidance of conflicts between courses selected from the following groups:

(*a*) English, Latin, Greek, French, German, Hebrew; (*b*) English, History, Political Economy, Philosophy; (*c*) Natural and Physical Sciences, Mathematics, Political Economy.

† A student pursuing the work of a Group Course must in the Fourth Year continue the subjects begun in the Third Year, except that a student taking in the Third Year a major and two minors may, in the Fourth Year, for the two minors substitute a major in one of them. An exception to this rule is made in the case of the Finance Minor of the Fourth Year, which may be taken by any student who has taken in the Third Year a major or a minor in Political Economy or a major, minor or the full course in Mathematics and Physics.

‡In Philosophy additional work is provided that is the equivalent of a major so that a full course may be taken in this subject. Additional work is provided by the Department of Mathematics and Astronomy which together with certain courses given by the Physics Department are equivalent to a major. See pages 60-1, 73-9.

(c) A Course in Philosophy.
(d) A Course in Latin Philosophy.
(e) A Course in Mathematics and Physics.
(f) A Course in Natural and Physical Science.

(Any one of five divisions.)

	Third Year	Fourth Year
Division A	Mathematics Physics Chemistry Geology and Mineralogy	Mathematics Physics, and either Chemistry or Geology and Mineralogy
Division B	Mathematics Physics Chemistry Astronomy	Mathematics Physics Astronomy
Division C	Physics Chemistry Any two of Botany, Geology and Mineralogy, Zoology	Physics Chemistry Any one of Botany, Geology and Mineralogy, Zoology
Division D	Physics Chemistry Botany or Zoology Physiology	Physiology Chemistry Any one of—Physics, Botany, Zoology
Division E	Botany Zoology Geology and Mineralogy Chemistry	Botany Zoology Geology and Mineralogy

For details as to the content of the above courses consult the outlines given under the various departmental captions, following the indication as to pages given below.

Subjects	Courses into Which They Enter	Pages
Classical Greek	Major, Minor, General	26-27
Biblical Greek	Minor	28
Latin	Major, Minor, General	29-30
Hebrew	Major, General	30-31
English	Major, Minor, General	32-35
French	Major, Minor, General	35-37
German	Major, Minor, General	38-39
Philosophy	Full Course, Major, Minor, General	40-41
Latin Philosophy	Full Course, General	41-43
History	Major, General	48-50
Political Economy	Major, Minor, General, Finance Minor	50-53
Mathematics	Full Course, Major, Minor, General, Finance Minor, Natural and Physical Science, Divisions A and B	53-57
Physics	Mathematics and Physics Course, Natural and Physical Science, Divisions A, B, C and D (optional in D, Fourth Year), General	58-59
Botany	Natural and Physical Science, Divisions C, D and E (optional in C and D), General	59-61
Geology and Mineralogy	Natural and Physical Science, Divisions A, C and E (optional in A, Fourth Year and C), General	61-62
Chemistry	Natural and Physical Science, Divisions A, B (Third Year), C, D and E (Third Year)—optional in A, Fourth Year, General	63-64
Physiology	Natural and Physical Science, Division D	65-68
Zoology	Natural and Physical Science, Divisions C and D optional) and E, General	68-69

N.B.—I. The addition of students of the Third and Fourth Years in Arts, and especially those pursuing literary and historical studies, is called to a voluntary course on the History of Art, given by the Professor of Architecture, one hour a week throughout the session. See page 108

N.B.—II. A new group course has been recently established and is announced in detail in the Agricultural and Home Economics Calendar. It consists of a major or two minors, chosen from the following: Latin, Greek ,English, French, German, Philosophy, History and Political Economy, togetheer with a major in Home Economics. Certain pre-requisite. First and Second Year studies are prescribed.

II.—MASTER OF ARTS

The following are the requirements for the Degree of Master of Arts (M.A.):

A Bachelor of Arts of the University of Manitoba may be admitted to the degree of Master of Arts under the following conditions:

1. He must have completed one year's study over and above that required for the Bachelor's degree, under the direction of the University of Manitoba or an affiliated College of the University. This course of study shall embrace one principal and one subordinate related subject, to be approved by the Board of Studies. At least half of the student's time shall be devoted to his major subject. At least three-quarters of his work shall be distinctly graduate in character, and any classes to which undergraduates are regularly admitted, shall not be deemed graduate for the purposes of the courses for the Master's degree.

2. He must pass an examination on the above course of study.

3. He must submit an acceptable thesis on a subject connected with his major course. The subject of the same will be approved by the Board of Studies on recommendation of two or more instructors in the department in which the subject falls. The thesis may be submitted either at or subsequent to the time of examination. At least four printed or typewritten copies are required.

For the present the course of study in any department for the M.A. degree will in the main be outlined on request by the instructors in that department, and adapted to suit the needs, capabilities and previous training of the applicant. Request therefor should be made to the Board of Studies, and the Board must also approve the course after it is outlined A limited number of M.A. courses are prepared in advance, and these are listed along with the undergraduate courses of the same department elsewhere in this Calendar.

CURRICULUM IN SCIENCE

The University of Manitoba confers one degree in Science, viz., Bachelor of Science (B.Sc.). The following are the requisites for proceeding in course to admission to this degree:

BACHELOR OF SCIENCE

Matriculation

The requirements for Matriculation for Science are set forth in detail on pages 21 to 32.

Undergraduate Course in Science

After having matriculated, the student of Science is required to pass four examinations before being admitted to the degree of Bachelor of Science, viz., the First, the Second, the Third, and the Fourth Year Examinations.

FIRST YEAR

Course Nos.	Page	SUBJECT	Fall Term Lecture Hours per week	Fall Term Lab. Hours per week	Spring Term Lecture Hours per week	Spring Term Lab. Hours per week
1, 2; 3, 4	51	English	4		4	
1; 4; 5, 6	73	Mathematics	6		6	
1, 2; 3, 4	78	Physics	1	4	4	2
1, 2; 21, 22	83	Chemistry	3(+1)	3	3(+1)	3
		One of—				
5 6,	55	French	3		3	
3, 4; 5, 6	58	German	3		3	

SECOND YEAR

Course Nos.	Page	SUBJECT	Fall Term Lecture Hours per week	Fall Term Lab. Hours per week	Spring Term Lecture Hours per week	Spring Term Lab. Hours per week
7, 8; 15, 16	79	Physics	3	3	3	3
3, 4; 25, 26	84	Chemistry	3	6	3	6
7, 10, 13, 16	73	Mathematics I	6		6	
		Or two of—				
1, 2; 3, 4	89	Zoology	2	2	2	2
1, 2; 7, 8	80	Botany	2	2	2	2
1, 2; 7, 8	82	Geology	2	2	2	
7, 16	73	Mathematics II	2		4	

THIRD YEAR

Course Nos.	Page	SUBJECT	Fall Term Lecture Hours per week	Fall Term Lab. Hours per week	Spring Term Lecture Hours per week	Spring Term Lab. Hours per week
		Any three of—				
27, 29, 30a, 55, 56	74	Mathematics	6		6	
54, 91, 92, 93, 96	75	Astronomy	5		6	
9, 10; 17, 18	79	Physics	3	3	3	3
7, 8; 11, 12; 33, 34	84	Chemistry	4	9	4	9
9, 10; 11, 12; 14	81	Botany	3	5	4	5
5, 6; 7, 8; 13, 14, 16	89	Zoology	4	6	4	6
11, 12; 13, 14, 19, 20; 22	82	Geology	5	2	4	5
9, 10; 13; 16	86	Physiology	3	10	3	6
(To be outlined)		Anatomy	2	13	2	13

FOURTH YEAR

Students of the Fourth Year in Science will take two subjects selected from one of the following groups:

A.—Mathematics, Physics, Chemistry, Geology.
B.—Botany, Zoology, Geology, Chemistry.
C.—Zoology, Physiology, Anatomy.
D.—Physiology and Chemistry, or Botany, or Physics.

The two subjects selected must have been taken already in the Third Year.

Course Nos.	Page	SUBJECT	Fall Term Lecture Hours per week	Fall Term Lab. Hours per week	Spring Term Lecture Hours per week	Spring Term Lab. Hours per week
(To be outlined)	78	Mathematics				
(To be outlined)		Physics				
19, 20 and two of 13, 14; 15, 16; 17, 18 and two of 35, 36; 37, 38; 39, 40	84-5	Chemistry	5	11	5	11
15, 16; 17, 18	81	Botany	4	9	4	9
5, 6; 7, 8; 13, 14; 16	89-90	Zoology	3	6	3	8
15, 16; 17, 18; 23, 24	82	Geology	4	11	4	11
11, 12; 17, 14; 19, 20	87-88	Physiology	2	6+	2	6+

Courses in Arts and Science in Detail

DEPARTMENT OF CLASSICS

F. W. Clark, B.A., Ph.D	*Professor of Latin and Greek*
Very Rev. G. F. Coombes, M.A., D.D.	*Professor of Latin and Greek*
R. O. Jolliffe, B.A., Ph.D.	*Professor of Greek and Latin*
Maude A. Bissett, B.A	*Assistant Professor of Greek and Latin*

N.B.—For key to system of numbering courses, see page 4.

CLASSICAL GREEK

*1. **Beginner's Greek Course.** This course is intended primarily for students who have not had the opportunity of taking Greek for Matriculation. The purpose is to prepare students as rapidly as possible for the reading of Greek. The main stress will be laid on a knowledge of the regular forms and on translation of Greek into English. White's First Greek Book (Ginn & Co.), Lessons I.-XXXI. Four hours a week.

*2. **Beginners' Greek Course.** Similar to course 1. White's. First Greek Book, Lessons XXXII-LXV., and LXXIV-LXXX. Four hours a week.

3. **Greek Authors.** This course is intended for students who have completed Courses 1 and 2. The text to be read is Salamis (Edwards, Cambridge Press.) This course will include also a thorough review of the forms of the language and of the more important prose constructions. Goodwin's Greek Grammar (Ginn & Co.) will be used. Easy sight translation. Four hours a week.

4. **Greek Author.** A continuation of Course 3A. The text read in the second term is Thucydides; Capture of Sphacteria (Graves, Macmillan Elementary Classics.) Easy sight translation. Four hours a week.

5. **Greek Author.** This course is provided for those students who enter the University with Matriculation credit in Greek. Text: Lucian, Charon and The Dream (Heitland, Cambridge Press). The course will include also a thorough review of the forms of the language, and of the more important prose constructions. Goodwin's Greek Grammar (Ginn & Co.) and Keep's Essential uses of the Moods in Greek and Latin (Grimble), will be used. Easy sight translation. Four hours a week. -

6 **Greek Author.** Continuation of Course 1. Text: Selections from Homer (Rennie, Edward Arnold). About 1000 lines will be read. Four hours a week.

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* Students who select this Course may in their Second Year take the Courses of the First Year, if they elect the Greek option. If they desire to enter upon the Major Course in Greek of the Third Year, they must give the department proof of having done sufficient work during the vacation to warrant their doing so.

7. **Greek Authors.** Plato: Apology (Adam, Cambridge Press) and Cebes: Tablet (Parsons, Ginn & Co.) will be read. Sight translation. Four hours a week.

8. **Greek Author.** About 1000 lines will be read from the Iliad. Text: Homer, Iliad, First Three Books and Selections (Sterrett, American Book Co.). Introduction to the literary study of Homer. Sight translation. Four hours a week.

9, 10. **Prose Composition and Sight Translation.** More detailed study of Greek syntax and idiom. Translation into Greek of continuous passages. Sight translation. One hour a week.

11. **Aristophanes.** Study of the text and content of the Birds and of selections from the Clouds with special reference to the history of Greek Comedy and the setting of these plays. Two hours a week.

12. **Homer.** Rapid reading and literary study of about 4,000 lines selected from the Iliad and the Odyssey. The Homeric age and the Homeric problem. Three hours a week.

13. **Greek Orators.** A selection of about 100 pages of text will be read, covering characterisitic passages from the chief orators from Antiphon to Demosthenes, and dealing both with the subject matter of the orations and the development of the Greek Language as an instrument of public speech. Jebb's Selections from the Attic Orators (Macmillan) will be used. Three hours a week.

14. **Herodotus and Aeschylus.** Reading and study of the content of Herodotus, Book VIII. Greek historical writers, with special reference to the style and method of Herodotus. In connection with the study of the Persian invasion, Aeschylus, Persae, ll. 1-531 will also be read. Two hours a week.

15. **Greek Antiquities.** The topography of Athens with a detailed study of the Acropolis and its buildings. Architecture and art. Readings from various authors and illustrations from the remains. Special topics for papers will be assigned. One hour a week.

16. **Greek History.** Bury's History of Greece, Chapters V.-IX. Lectures and readings on the period from 500 B.C. to 431 B.C. The Persian wars, the growth of the Athenian Empire, and the causes of the Peloponnesian war. Special topics and papers will be assigned. One hour a week

17. **Greek Tragedy.** The texts studied will be Aeschylus, Prometheus Vinctus; Sophocles, Oedipus Tyrannus; Euripides, Medea. History of Greek tragedy and comparison of its three masters. Three hours a week.

18. **Pindar and Theocritus.** Literary study of Pindar, Olympian Odes I., II., III., VII., Pythian Odes, I., III., IV., and of Theocritus, Idylls VI., VII., XIII., XV., XVIII., XXVIII. The form and content of the Epinician ode; the Alexandrian School of poetry. Two hours a week.

19. **Thucydides.** Book VII. will be read. Study of representative passages in translation. Greek historical writers with special reference to Thucydides. Two hours a week.

20. **Plato.** Detailed study of the Republic, I.-IV., with special reference to their ethical and political content, and their application to modern social and political problems. Three hours a week.

21. **Greek Antiquities.** The private life, education, and religion of the Greeks; the national games. Readings from various authors. Special topics will be assigned for papers. One hour a week. (Not given in 1919-20.)

22. **Greek History.** Bury's History of Greece, Chapter X. to XVI. (inclusive). Lectures and readings on the period from 431 B.C. to 338 B.C. The Peloponnesian war, the Spartan and Theban hegemonies, the rise of Philip of Macedon. Special topics and papers will be assigned. One hour a week.

History of Art. See page 108.

Senior Matriculation: Courses 1, 2, *or* 5, 6.
First Year, Arts: Courses 1, 2, *or* 5, 6.
Second Year, Arts: Courses 3, 4, *or* 7, 8.
Third Year, Arts: Major: Courses 9, 10, 11, 12, 13, 14, 15, 16.
Minor: Courses 9 and 10, *or* 15 and 16; 12, 13.
General: Courses 11, 12.
Fourth Year, Arts: Major: Courses 9, 10, 16, 17, 18, 19, 20, 22.
Minor: Courses 9 and 10, *or* 16 and 22; 17, 20.
General: Courses 17, 20.

BIBLICAL GREEK

(*Courses 1, 2, 3, 4, 7, 8, 11, 12 are given only in the affiliated Colleges; courses 5, 6, 9, and 10 are given in the University.*)

1, 2. **Biblical Greek I.** Moulton's First Greek Reader in New Testament Greek will be covered together with the corresponding sections of Moulton's Introduction to New Testament Greek. First term: Moulton's Introduction, Exercises 1 to 27; Second term: Moulton's Introduction completed. Three hours a week.

3, 4. **Biblical Greek II.** The Book of Acts will be read and training in continuous Greek composition will be given, based on the text read, and with reference to Burton's New Testament Moods and Tenses. Exercises in sight translation of simple Hellenistic Greek will be given from time to time. First term: Acts 1-14. Second term: Acts 15-28. Three hours a week.

5. **Synoptic Gospels.** The course will consist of a rapid reading of the Synoptic Gospels in Greek with brief introductory and explanatory notes. Three hours a week.

6. **Pauline Epistles and Apocrypha.** A rapid reading of Romans, Corinthians 1 and 2, Galatians, Thessalonians 1 and 2, Maccabees 1, Judith and the Wisdom of Solomon, with brief introductory and explanatory notes. Three hours a week.

7. **History of New Testament Times.** The period covered is 165 B.C. to 135 A.D. The prescribed text is W. D. Morrison's The Jews under the Roman Empire (Stories of the Nations). One hour a week.

8. **Pauline Epistles and Apocrypha.** A course complementary to Course 6. Lectures and reading on the "Introduction" to books read in Course 6. Case, Environment of Early Christianity and Charles, Between the Old and New Testaments will form the basis of study. One hour a week.

9. **New Testament Epistles and Patristics.** Rapid reading of Philippians, Colossians, Philemon and Hebrews; also Justin Martyr's Apologies 1 and 2. The edition of the latter by Gildersleeve (American Book Co.), is recommended. Three hours a week.

10. **New Testament Epistles and Apocrypha.** Rapid reading of Timothy 1 and 2; James; Peter 1 and 2; and John 1,2 and 3; also of Baruch, Tobit and Ecclesiasticus (The Wisdom of Jesus the Son of Sirach). Three hours a week.

11. **Primitive Christianity.** Harnack's Mission and Expansion of Christianity, Vol. 1. (Putnam), will form the basis of study. Lectures and reading. One hour a week.

12. **The Graeco-Roman World.** Cumont's Oriental Religions in Roman Paganism (Open Court, Chicago), will form the basis of study. Lectures and reading. One hour a week.

First Year, Arts: Courses 1, 2.
Second Year, Arts: Courses 3, 4.
Third Year, Arts: Minor: Courses 5, 6, 7, 8.
Fourth Year, Arts: Minor: Courses 9, 10, 11, 12.

Courses 1 and 2 (and consequently also 3 and 4) are open only to such students as have not taken Greek for Matriculation.

Nestle's New Testament in Greek and the British and Foreign Bible Society's Old Testament in Greek are convenient texts which can be easily secured. Where annotated texts are desired, the editions of the books read in the Cambridge Bible in Greek will be found useful.

LATIN

1. **Prose Composition.** Bradley-Arnold Latin Composition, Exercises 1-15, omitting 4 and 13. One hour a week.

2. **Prose Composition.** Bradley-Arnold continued. Exercises 16-32, omitting 19, 20, 25, 26. One hour a week.

3. **Prose Authors and Sight Translation.** Text: A Latin Reader, by A. Petrie (Oxford Press). Selections 10-15 and 32-38 will be studied. Three hours a week.

4. **Verse and Sight Translation.** Text: A Latin Reader, by A. Petrie (Oxford Press). Study of the following selections from Vergil and Ovid; 88, 92-100, 102, 103, 124, 125, 129-131, 135. Three hours a week.

5. **Prose Composition.** Simple continuous prose. Latin Composition by Allcroft & Haydon (University Tutorial Press). Exercises 21-34. One hour a week.

6. **Prose Composition.** A continuation of Course 5. Exercises 35-50 in Allcroft & Haydon. One hour a week.

7. **Prose Authors and Sight Translation.** Text: A Latin Reader, by A. Petrie (Oxford Press). Study of selections from Sallust, Livy and Pliny numbered 46 and 49-72. Three hours a week.

8. **Verse Authors and Sight Translation.** Two texts will be used. (*a*) A Latin Reader by A. Petrie (Oxford Press), in which the extracts from Catullus, Tibullus, Propertius and Horace will be read; (*b*) Post: Selected Epigrams from Martial (Ginn & Co.), from which the following epigrams, amounting to about 250 lines, will be studied. Book I: 3, 9, 10, 13, 32, 47, 75, 79, 98; Book II: 11, 80, 90; Book III: 14, 15, 35, 52, 63; Book IV: 15, 32, 44; Book V: 8, 9, 29, 34, 43, 47, 49, 56, 58; Book VI: 8, 17, 48; Book VII: 3, 83, 92; Book VIII: 9, 10, 12, 17, 69, 76; Book IX: 10, 15, 46, 68; Book X: 39, 47, 62. Three hours a week.

9, 10. **Prose Composition.** Translation into Latin of representative passages from English authors. One hour a week.

11. **Cicero.** The following speeches: In Catilinam IV; Pro Archia; Philippic XIV. Text: Select Orations of Cicero, by Allen and Greenough (Ginn & Co). In addition about forty or fifty letters will be read, as found in Abbott's edition (Ginn & Co). A knowledge of the life of Cicero will be expected. Book recommended: Cicero, by Strachan-Davidson (Heroes of the Nation Series; G. P. Putnam's Sons). Three hours a week.

12. **Caesar.** A study of the life and works of Caesar, with the reading of Bellum Gallicum, Book V, 1-23; Book VI; Book VII; and Bellum Civile, Book III. For the life of Caesar, Warde Fowler's Caesar (Heroes of the Nations Series; G. P. Putnam's Sons) will be used. Two hours a week.

13. **Roman Elegiac Poetry.** About 2000-2500 lines will be read from Catullus, Ovid, Tibullus and Propertius. Text: Roman Elegiac Poets by Harrington (American Book Co). Two hours a week.

14. **Vergil.** Critical reading of Eclogues 1, 3, 4, 6, 8, 10; Aeneid, Books 2, 4, 6. Additional reading will be assigned in the English version so that an idea may be gained of Vergil's work as a whole. Characteristics of Vergil's poetry. Vergil's place in literature. Three hours a week.

15. **Roman History.** A study of the period from 133 B.C to 49 B.C. Pelham: Outlines of Roman History. The work will be supplemented by the study of special topics in Mommsen, Taylor, and How and Leigh. One hour a week.

16. **Roman Antiquities.** Roman Private Life. Pompeii and its remains. Such topics as the Roman name, family, slaves, marriage and divorce, burial, dress, education. Books for reference: Mau-Kelsey, Pompeii; Johnston, Private Life of the Romans; Wilkins, Roman Education. One hour a week.

17. **Latin of the Empire.** Selections from Martial, Juvenal, Pliny, Seneca, Quintilian and St. Augustine, as found in Gillies and Cumming: Latin of the Empire (Bell & Sons). Selected chapters will be assigned from Capes: Early Roman Empire, and Dill: Roman Society from Nero to Marcus Aurelius, to illustrate the history and life of the period. Three hours a week.

18. **Horace.** A study of the life and poetry of Horace, with the reading of Satires I: 1, 4, 5, 6; Epistles I: 1, 2, 6, 7, 10, 11, 13, 14, 16, 20; and selected Odes. Three hours a week.

19. **Lucretius and Vergil.** Lucretius, Book I, 1-634; Book III, 1-349 and 830 to end; Book V, 1-431 and 728 to end. Study of the philosophy, moral teaching and literary art of Lucretius. Selections from the Georgics of Vergil, amounting to about 400 lines, will also be read. Two hours a week.

20. **Tacitus.** The Agricola, together with the selections from Tacitus found in Gillies and Cumming: Latin of the Empire. Additional passages will be assigned in translation to illustrate the main characteristics of the historian. Two hours a week.

21. **Roman History.** A study of the period from 55 B.C. to 37 A.D. Mommsen, History of Rome, selected chapters; Capes, Early Roman Empire; Shuckburgh, Life of Augustus. One hour a week.

22. **Roman Antiquities.** Brief survey of the topography of Rome in its historical development. More detailed study of the forum, chief public buildings, aqueducts, baths, amphitheatre, circus. Books for reference: Middleton, Remains of Ancient Rome; Huelsen-Carter, The Roman Forum; Platner, Ancient Rome; Friedlaender-Freese, Roman Life and Manners under the Early Empire. One hour a week. (Not given in 1919-20).

History of Art. See page 108.

Senior Matriculation: Courses 1, 2, 3, 4.
First Year, Arts: Courses 1, 2, 3, 4.
Second Year, Arts: Courses 5, 6, 7, 8.
Third Year, Arts: Major: Courses 9, 10, 11, 12, 13, 14, 15, 16.
Minor: Courses 11, 14, with either 9 and 10 *or* 15 and 16
General: Courses 11, 14.
Fourth Year, Arts: Major: Courses 9, 10, 16, 17, 18, 19, 20, 21.
Minor: Courses 17, 18, with either 9 and 10 *or* 16 and 21.
General: Courses 17, 18

HEBREW

Instruction in Hebrew is provided only in the affiliated Colleges.

1. **Hebrew Language.** Genesis, Chaps. I-VIII, including the fundamental principles of the grammar of the language, the acquisition of a vocabulary and simple translation into Hebrew. Harper, Elements of Hebrew and Introductory Hebrew Method, Lessons 1-12, inclusive.

2. **Hebrew Language.** Continuation of Course 1. Harper, Introductory Hebrew Method, Lessons 13-24, inclusive.

3. **Hebrew Language.** Review of Courses 1 and 2, and Harper, Introductory Hebrew Method, Lessons 25-34, inclusive.

4. **Hebrew Language.** Review of Courses 1, 2, and 3, and Harper, Introductory Hebrew Method, Lessons 35-50, inclusive.

5. **Old Testament History.** Paton, History of Syria and Palestine, Pages 1-178. Kent, The United Kingdom, pages 1-98.

6. **Old Testament History.** Kent, The United Kingdom, pages 101 to end, omitting chapters on Sources. Kent, The Divided Kingdom. Kent, Babylonian, Persian and Greek Periods, pages 1-267.

7. **Old Testament Introduction.** (a) Chapman, Introduction to the Pentateuch (Cambridge Bible). (b) Geden, Introduction to the Hebrew Bible (T. & T. Clark), Chapters I-V, inclusive.

8. **Old Testament Introduction.** "Former and Latter Prophets;" "The Writings." Books of reference: Moore, Literature of the Old Testament, Chapters IX-XXIII, inclusive (Home University Library); Gray, Critical Introduction to the Old Testament, Chapters VII-XXIV, inclusive; Kent, History of the Jewish People, Babylonian, Persian and Greek Periods (Scribners).

9. **Historical Geography.** Smith, Historical Geography of the Holy Land, Vol, II, pp. 285-520, Jerusalem. Essay required.

10. **Archaeology.** Barton, Archæology and the Bible, pages 1-218.

11. **Old Testament Religion.** Marti, Old Testament Religion; or Montefiore, Hibbert Lectures. Lectures or Essay.

12. **Social Ethics.** Kent, The Social Teachings of the Prophets and Jesus, pages 1-173.

*13. **Historical Hebrew.** (a) Exodus I-V. (Driver, Cambridge Bible). (b) Exodus, VI-VIII, and XII. (Driver, Cambridge Bible).

*14. **Legal Codes.** (a) Exodus XX-XXIII. (Driver, Cambridge Bible). (b) Exodus XXXIV. (Driver, Cambridge Bible) and Deuteronomy V-VII. (Robinson, Century Bible).

*15. **Prophetic Literature.** (a) Isaiah I-V. (Skinner, Cambridge Bible). (b) Isaiah VI-X. (Skinner, Cambridge Bible).

*16. **Prophetic Literature.** (a) Isaiah XL-XLIII. (Skinner, Cambridge Bible). (b) Isaiah XLIX-LV (Skinner, Cambridge Bible).

*17. **Hebrew Poetry.** Psalms CVII, CX, CXI, CXVI, CXXXV, CXXXVII, CXXXIX, CXLVI (Kirkpatrick, Cambridge Bible).

*18. **Wisdom Literature.** Job I-VIII, and XLII.

First Year, Arts: Courses 1, 2.
Second Year, Arts: Courses 3, 4.
Third Year, Arts: Major Courses 5, 6, 9, 10, 13a, 13b, 14a, 14b, 15a, 16a, 17, 18.
General: Courses 5, 6, 9, 10, 13a, 13b, 14a, 14b, or Courses 1, 2.
Fourth Year, Arts: Major: Courses 7a, 7b, 8, 11, 12, 13a, 14a, 15a, 15b, 16a, 16b, 17, 18.
General: Courses 7a, 7b, 8, 11, 12, 15a, 15b or 17, 16a, 16b or 18.
or Courses 3, 4.

SCRIPTURE

Instruction in Scripture is provided only in the affiliated Colleges.

N.B.—For key to system of numbering courses, see page 4.

1. **Old Testament Scripture.** Isaiah XLI.-LXVI. (Skinner, Cambridge Bible). In addition to mastering the contents of the book students will be required to give attention to the contributions to its interpretation of critical, archaeological and historical research. Maspero, Ancient Egypt and Assyria, pp. 194 to end of book.

2. **New Testament Scripture.** Luke (Century Bible). Ramsay, Luke, The Physician.

Third Year, Arts: General: Courses 1, 2.
Fourth Year, Arts: General: Courses 1, 2.

DEPARTMENT OF ENGLISH

A. W. Crawford, M.A., Ph.D	*Professor*
Aaron J. Perry, M.A	*Assistant Professor*
Douglas L. Durkin, B.A	*Assistant Professor*
John A. M. Edwards, B.A.	*Fellow*

N.B.—For key to system of numbering courses, see page 4.

1, 2. **English Composition.** Text: English Composition in Theory and Practice, by Canby and others (Macmillan). The course is designed especially for students in Senior Matriculation to the Engineering and Medical Courses. Short themes will be required of all students throughout the year, and longer themes at the discretion of the instructor. (1) First Term: Chapters I-VII. (2) Second Term: Chapter VIII to the end. Two hours a week. *Assistant Professor Durkin.*

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*N.B.—In the treatment of Courses 13-18, special attention will be paid to questions of grammar, syntax, introduction, exegesis and history. Students are advised to consult the appropriate volumes of the Century Bible and the Cambridge Bible.

3, 4. **English Literature.** A study of leading English poets and prose writers, from Chaucer to the present time. Text: English Poems from Chaucer to Kipling, edited by Parrott and Long (Ginn & Co.). (1) First Term: (a) pages 1-143 (Chaucer to Burns); (b) Shakespeare's Twelfth Night; (c) Bunyan's Pilgrim's Progress, Part I. (Macmillan's Pocket Classics); (d) Goldsmith's The Vicar of Wakefield (Macmillan's Pocket Classics. (2) Second Term: (a) pages 144-302 (Wordsworth to Kipling); (b) Lamb's Essays of Elia (Everyman's Library; (c) Scott's Ivanhoe (Everyman); (d) Stevenson's Travels With a Donkey, etc. (Macmillan's Pocket Classics). Two hours a week. *Assistant Professors Perry and Durkin.*

5, 6. **English Composition.** Text: College Composition, by Charles S. Baldwin (Longmans, Green & Co.). A study of the principles and practice of English composition. The writing of numerous original compositions during the year. Study of selections from modern prose writers, under the direction of the instructor. (1) First Term: Part I. Composition of Ideas; (2) Second Term: Part II. Composition of Images. Two hours a week. *Assistant Professor Durkin.*

(*Note*—In Courses 1, 2 and 5, 6, a maximum of twenty marks will be allowed for the class work of each term, including essays. This work will be examined by the instructor. A maximum of thirty marks will be allowed for the final examination paper for each term. The marks for term work will not be counted in determining the award of scholarships).

7, 8. **English Literature**—Texts: History of English Literature, by W. J. Long (Ginn & Co.); English Poetry: Its Principles and Progress, by Gayley and Young (Macmillan).

(1) First term: (a) History—Chapters VII-IX. (b) Prose—Bunyan's Pilgrim's Progress, Part I.; Swift's Gulliver's Travels, Parts I. and II. (Everyman). (c) Poetry—Milton's L'Allegro, Il Penseroso, Lycidas; Dryden's Alexander's Feast; Pope's Rape of the Lock; Gray's Elegy in a Country Churchyard; Goldsmith's Deserted Village; Burns's Tam o' Shanter.

(2) Second term: (a) History—Chapters X-XI. (b) Prose—Lamb's Essays of Elia; Ruskin's Sesame and Lilies (Everyman). (c) Poetry—Wordsworth's Tintern Abbey, Ode to Duty, London, 1802, Composed upon Westminster Bridge, It is a Beauteous Evening, The World is too Much With Us, Scorn not the Sonnet; Coleridge's Ancient Mariner; Byron's Prisoner of Chillon, Sonnet—On Chillon, Stanzas from Childe Harold; Shelley's Ode to the West Wind, To a Skylark; Keats' Ode to a Nightingale, On First Looking into Chapman's Homer, On the Grasshopper and the Cricket; Tennyson's Oenone, The Lady of Shalott, Ulysses, Tithonus; Browning's Home Thoughts from Abroad, Home Thoughts from the Sea, My Last Duchess, Andrea del Sarto; Arnold's Rugby Chapel, Dover Beach. Two hours a week. *Assistant Professor Perry.*

9, 10. **English Prose.** Text: Modern English Prose, edited by Carpenter and Brewster (Macmillan). A study of numerous examples of modern English prose, with practice in writing. Minimum requirement of 2000 words in the written compositions of each term. (1) First Term: Study and Practice, chiefly in Description and Narration. Pages 1-214. (2) Second Term: Study and practice, chiefly in Exposition and Argument. Pages 215-463. Two hours a week. *Assistant Professor Durkin.*

11, 12. **English Literature.**

(1) First Term: (a) Tennyson's Gareth and Lynette, Lancelot and Elaine, The Passing of Arthur; Lowell's The Vision of Sir Launfal (Gayley & Young); Arnold's Sohrab and Rustum (Macmillan's Pocket Classics). (b) Scott's Kenilworth (Everyman's Library); Hardy's Far From the Madding Crowd (Cornell Series).

(2) Second Term: (a) Chaucer's Prologue to the Canterbury Tales (Gayley & Young). (b) Shakespeare's Romeo and Juliet; King Lear. Two hours a week. *Professor Crawford and Assistant Professor Perry.*

13. **Chaucer.** The Canterbury Tales: The Prologue, The Knighte's Tale, The Nonne Preestes Tale, The Pardoner's Tale. Texts: Selections from Chaucer, edited by E. A. Greenlaw (Scott, Foresman & Co.); Chaucer, by A. W. Ward (English Men of Letters).

Supplementary Reading: The Tale of the Man of Lawe, and The Clerk's Tale. Two hours a week. *Assistant Professor Perry.*

14. **Middle English.** Text: A Literary Middle English Reader, edited by A. S. Cook (Ginn & Co.). The following selections: Malory, Morte d'Arthur, King Horn; Gower, Confessio Amantis, Sir Gawain and the Green Knight; Sir Orfeo; Chaucer, Sir Thopas; Dame Sirith; Layamon, Brut; The Old English Chronicle; The Ancren Riwle; The Owl and The Nightingale; Piers the Plowman; The Pearl; The Chester Noah's Flood; The York Nativity Play.

Reference: Baldwin, An Introduction to Medieval Literature (Longmans). Two hours a week. *Assistant Professor Perry.*

15. **Spenser and Milton.** (a) Spenser: Faerie Queen, Book I. Text: Edited by Kitchin (Clarendon). Church: Spenser (English Men of Letters). (b) Milton: Comus; Areopagitica; Sonnets; Paradise Lost, Books I, II, III, IV; Pattison: Milton (English Men of Letters). Three hours a week. *Professor Crawford.*

16. **Eighteenth Century Literature.** (a) Prose-Addison and Steele: The Sir Roger De Coverley Papers (Macmillan's Pocket Classics); Goldsmith: She Stoops to Conquer (Macmillan's Pocket Classics); Burke: Speech on Conciliation (Macmillan's Pocket Classics). (b) Ballads—Old English Ballads, edited by Armes (Macmillan's Pocket Classics). (c) Poems—Pope: Windsor Forest; Epistle to Dr. Arbuthnot; Essay on Man; Johnson: Vanity of Human Wishes; Collins: Ode to Simplicity; Ode to Evening; The Passions; Gray: Ode on the Spring; Ode on Eton College; Hymn to Adversity; Elegy in a Country Churchyard; The Progress of Poesy; The Bard; Cowper: Selections from The Task; On the Receipt of My Mother's Picture; Burns: Mary Morison; The Twa Dogs; The Cotter's Saturday Night; To a Mouse; To a Mountain Daisy; John Anderson; Highland Mary; Scots Wha Hae; Is There for Honest Poverty; Blake: Song; Introduction to "Songs of Innocence"; The Echoing Green; The Lamb; Holy Thursday; The Defiled Sanctuary; The Tiger; The Garden of Love; From "Milton"; To the Queen. Text: English Poems of the Eighteenth Century, edited by Bronson (University of Chicago Press). Two hours a week. *Professor Crawford.*

17. **The English Drama.** Everyman; The Wakefield Second Shepherd's Play; Udall's Ralph Roister Doister; Norton and Sackville's Gorboduc; Marlowe's The Jew of Malta; Jonson's Volpone; Beaumont and Fletcher's The Knight of the Burning Pestle (Everyman's Library, numbers 381, 492, 491, 383, 489, 506). Introduction to Shakespeare, by MacCracken, and others (Macmillan). Chapters II, "English Drama Before Shakespeare"; III, "The Elizabethan Theatre"; IV, "Elizabethan London." Two hours a week. *Professor Crawford.*

18. **Shakespeare.** King John; Macbeth; Hamlet; Antony and Cleopatra; The Winter's Tale; The Tempest (Tudor Shakespeare, Macmillan). Introduction to Shakespeare, by MacCracken, and others (Macmillan). Three hours a week. *Professor Crawford.*

19, 20. **Advanced Composition.** A practice course in writing, with selected readings in modern prose literature. Weekly themes under the direction of the instructor. (a) First Term. Exposition. The writing and study of essays, editorials, reviews, criticisms, and reports. (b) Second Term. Narrative. The writing and study of historical sketches, character sketches, short biographies, short stories, and one-act plays. One hour a week. *Assistant Professor Durkin.*

21. **The Romantic Poets.** English poems of the Nineteenth Century, edited by Bronson (University of Chicago Press); Selections from Wordsworth, Coleridge, Shelley and Keats. Lives of the Authors in English Men of Letters Series. Three hours a week. *Professor Crawford.*

22. **The English Novel.** The Early Novel: Extracts in Simond's Introduction to English Fiction (Heath); Goldsmith's Vicar of Wakefield (Everyman's Library); Walpole's Castle of Otranto (King's Classics); Edgeworth's Castle Rackrent (Everyman); Austen's Pride and Prejudice (Everyman); Thackeray's Henry Esmond (Everyman); Dicken's Oliver Twist (Everyman); George Eliot's Silas Marner (Everyman); Meredith's Ordeal of Richard Feverel (Scribner's); Stevenson's Master of Ballantrae (People's Library); Hardy's The Return of the Native (Scribner's); William de Morgan's Joseph Vance (Heineman); Joseph Conrad's Lord Jim (Doubleday, Page & Co.). Text: Development of the English Novel, by W. L. Cross (Macmillan). Three hours a week. *Assistant Professor Perry.*

(*Note*—As preparation for class study, students should read these novels carefully during the preceding summer).

23. **Tennyson.** (a) Shorter Poems: The Two Voices; The Palace of Art; The Lotus-Eaters; St. Simeon Stylites; Locksley Hall; The Vision of Sin; Break, Break, Break; Ode on the Death of the Duke of Wellington; In the Valley of Cauteretz; Locksley Hall (Sixty Years After); Crossing the Bar. (b) In Memoriam. (c) Idylls of the King: The Coming of Arthur; Lancelot and Elaine; The Holy Grail; Guinevere; The Passing of Arthur. Texts: Works of Tennyson, edited by Hallam, Lord Tennyson (Macmillan); Tennyson, by A. C. Benson (Methuen's Shilling Library). Three hours a week. *Professor Crawford.*

24. **Browning.** My Last Duchess; Count Gismond; The Flight of the Duchess; The Lost Leader; In a Gondola; The Last Ride Together; By the Fireside; Up at a Villa—Down in the City; Pictor Ignotus; Fra Lippo Lippi; The Bishop Orders his Tomb; How it Strikes a Contemporary; Abt Vogler; Evelyn Hope; Memorabilia; Prospice; Childe Roland to the Dark Tower Came; A Grammarian's Funeral; An Epistle of Karshish; Caliban upon Setebos; Saul; Rabbi Ben Ezra; Confessions; In a Balcony; Old Pictures in Florence; Why I am a Liberal. Text: Browning's Selected Poems, edited by Porter and Clarke (Crowell, N.Y.); Life of Browning, by Edward Dowden (Everyman). Three hours a week. *Professor Crawford.*

25, 26. **Old English.** Text: Bright's Anglo-Saxon Reader (Holt). (1) First Term: Phonology, Grammar. Extracts I-V, XII, XVI, XVIII, XIX. (2) Second Term: Grammar, Versification. Extracts XX, XXI, XXII, XXIII. Beowulf, lines 53-188; 663-837; 1252-1651; 2461-2821. Text: Beowulf, edited by Harrison and Sharp (Ginn & Co.). Two hours a week. *Assistant Professor Perry.*

27, 28. **History of the English Language.** Texts: Noble's Story of English Speech (Badger); Krapp's Modern English, Its Growth and Present Use (Scribner's); Smith's Studies in English Syntax (Ginn & Co.).

References: Jespersen's Growth and Structure of the English Language (Stechert & Co., N.Y.); Emerson's History of the English Language (Macmillan); Greenough and Kittredge's Words and Their Ways in English Speech (Macmillan). One hour a week. *Assistant Professor Perry.*

29. **Nineteenth Century Literature.** (a) Prose. Carlyle's Heroes and Hero-Worship (Everyman's Library); Ruskin's Crown of Wild Olive (Everyman); Arnold's Culture and Anarchy (Nelson). (b) Poetry. English Poems of the Nineteenth Century, edited by Bronson (University of Chicago Press): Selections from Mrs. Browning; Clough; Arnold; Rossetti; Swinburne. One hour a week. *Professor Crawford.*

30. **Contemporary and Canadian Poets.** (a) British contemporary poets. Text: Poems of To-Day, published for the English Association (London), by McClelland & Stewart (Toronto). Selections from Robert Bridges, Rupert Brooke, W. H. Davies, Walter De La Mare, Rudyard Kipling, John Masefield, Alice Meynell, Henry Newbolt, Francis Thompson, William Watson, W. B. Yeats.

(b) **Canadian Poets.** Text: The Oxford Book of Canadian Verse. Special attention will be paid to the selections from the following: Charles Sangster, Charles Mair, Isabella Crawford, W. H. Drummond, Charles G. D. Roberts, Wilfred Campbell, Bliss Carman, Archibald Lampman, Duncan C. Scott, Pauline Johnson. Additional readings in the authors named may be assigned by the instructor. One hour a week. *Professor Crawford.*

History of Art. See page 108.

Senior Matriculation:	Courses 1, 2, 3, 4, or 5, 6, 7, 8.
First Year Arts:	Courses 5, 6, 7, 8.
First Year, Science:	Courses 1, 2, 3, 4.
Second Year, Arts:	Courses 9, 10, 11, 12.
Third Year, Arts (Major):	Courses 13, 14, 15, 16, 17, 18, 19, 20.
(Minor):	Courses 15, 17, 18.
(General):	Courses 15, 18.
Fourth Year, Arts (Major):	Courses 21, 22, 23, 24, 25, 26, or 21, 22, 23, 24, 27, 28, 29, 30.
(Minor):	Courses 23, 22, 27, 28.
(General):	Courses 23, 22.

DEPARTMENT OF FRENCH

W. F. Osborne, M.A. .... *Professor*
———————— .... *Lecturer*

N.B.—For key to system of numbering courses, see page 4.

1, 2. **Grammar, Composition and Oral Work.** This latter will include an elementary study of phonetics, conversation and dictation. First Term: Elementary French Grammar, by E. W. Olmsted (Holt & Co.), to end of Lesson XIX. Second Term: Same text as in First Term, from Lesson XX to end. Two hours a week.

3, 4. **French Authors.** First Term: French Short Stories (edited by Buffum, published by Holt & Co.), pp. 30-171. Second Term: Mérimées Colomba (edited by Williamson, published by American Book Co.). The student will use Cassell's English-French and French-English Dictionary. Two hours a week. Collateral reading for both terms: Ernest Lavisse: Histoire de France.

5, 6. **Special French Reading.** (For students of Senior Matriculation and B.Sc. courses only). A special study of the French verb will be made in this course, and Muller's Short Theory of the Conjugation of the French Verb (Copp, Clark & Co.) may be used. First Term: Popular Science, by J. Luquiens (Ginn & Co.), pp. 1-41. Second Term: Same text, Luquiens, pp. 42-95, and pp. 97-172. The student will use Cassell's English-French and French-English Dictionary. Three hours a week.

7, 8. **French Authors.** First Term: Racine's Athalie (edited by Eggert, published by Heath). Second Term: Loti's Pêcheur d'Islande (edited by Super, published by Heath). The student will use Cassell's English-French and French-English Dictionary. One hour a week.

9, 10. **General Survey of French Literature.** First Term: Histoire de la Littérature française, by Rene Doumic (Librairie Paul Delaplane, Paris). The 17th Century Period. Second Term: Same text, the 18th and 19th Centuries. One hour a week.

11, 12. **Conversation and Original Composition in French.** One hour a week each term.

13, 14. **Translation from English into French.** First Term: Lazare's Elementary French Composition (published by Ginn), pp. 83-91. Second Term: Same text, pp. 91-101. One hour a week each term.

15. **History of French Literature, XVIIth Century.** Course of lectures covering this period. Students will use as a basis for their reading Histoire de la Littérature française, by Petit de Julleville, Nouvelle Edition (Masson et Cie), pp. 225-322. Collateral reading suggested by the professor in charge will form an integral part of the course. One hour a week.

16. **History of French Literature, XVIIth Century.** As above (Course 15), continued. Petit de Julleville, pp. 323-405. One hour a week.

17. **Studies in French Masterpieces of the XVIIth Century.** Corneille, Le Cid (Heath); Pascal, Les Provinciales (in Selections from Pascal, Heath); Boileau, L'Art Poétique (in Selections from Boileau, Heath); La Fontaine, first twenty-five Fables (in edition of American Book Co., Fifty Fables, edited by McKenzie); Racine, Phédre (Heath). Three hours a week.

18. **Studies in French Masterpieces of the XVIIth Century.** Molière, L'Avare (Heath); Le Misanthrope (Heath); Madame de Sévigné, Lettres à Madame de Grignan (edition of Letters of Madame de Sévigné, edited by Harrison, Ginn & Co.); Bossuet, Oraison Funèbre de Henriette d'Angleterre (Heath); La Bruyère, Des Femmes, Du Cœur, De la Société et de la Conversation, Des Biens de Fortune, De la Cour, Des Grands (edition of Les Caractères, edited by Warren, Heath). Three hours a week.

19, 20. **Progressive Exercises in Original Composition in French.** One hour a week.

21. **Translation from English into French.** Cameron's Elements of French Composition, Part II (Henry Holt). One hour a week.

22. **Translation from English into French.** Cameron's Elements of French Composition, Part III (Henry Holt). One hour a week.

23, 24. **French Conversation.** Themes designed to give the student a command of the language of every-day life. A progressive and definite character will be given to these exercises by following the materials contained in Allen and Schoell's "French Life" (Henry Holt). This section of the work will represent not less than fifty marks for the year. One hour a week.

25. **History of French Literature, XVIIIth Century.** Course of lectures covering this period. Students will use as a basis for their reading Histoire de la Littérature française, by Petit de Julleville, Nouvelle Edition, pp. 405-495. Collateral reading suggested by the professor in charge will form an integral part of the course. One hour a week.

26. **History of French Literature, XIXth Century.** Course of lectures covering this period. Students will use as a basis for their reading Histoire de la Littérature française, by Petit de Julleville, Nouvelle Edition, pp. 496-579. Collateral reading suggested by the professor in charge will form an integral part of the course. One hour a week.

27. **Studies in French Masterpieces of the XVIIIth Century.** Lesage, Turcaret, edited by Kerr (Heath); Marivaux, Le Jeu de l'Amour et du Hasard, edited by Fortier (Heath); Voltaire, Zaire, edited by Cabeen (Heath), and Zadig, edited by Babbitt (Heath); Sedaine, Le Philosophe sans le Savoir, edited by Oliver (Oxford University Press, Toronto); Montesquieu, Letters 1-54 inclusive, in the Edition of Lettres Persanes, edited by Cru (Oxford University Press, Toronto); Diderot, Selections from edition by Giese (Heath); Rousseau, Selections from edition by Rocheblave; Beaumarchais, Le Barbier de Seville, edited by Spiers (Heath). Three hours a week.

28. **Studies in French Masterpieces of the XIXth Century.** Chateaubriand, Atala, edited by Kuhns (Heath); Lamartine, Selections from Premières Meditations Poétiques, edited by Curme (Heath); Victor Hugo, Preface de Cromwell and Hernani, in edition of Effinger (Scott, Foresman & Co., Chicago), and pp. 3-107, in Selected Poems by Victor Hugo, edited by Schinz (Heath); Alfred de Musset, Selection from the Poetry of Alfred de Musset, edited by Kuhns (Ginn); Balzac, Adieu, in Cinq Scènes de la Comédie Humaine, edited by Wells (Heath). The critical reading of the preceding to be supplemented by rapid private reading of Anatole France, Le Livre de Mon Ami, edited by Guerlac (Holt); and René Bazin; Le Blé qui lève, edited by Neff (Holt). Of the marks assigned for examination on this section about 30 per cent will be given to translation, the balance of the marks will represent critical work. Three hours a week.

29, 30. **Progressive Exercises in Original Composition in French.** One hour a week.

31, 32. **Translation from English into French.** French Composition, by G. W. F. Goodridge (Oxford University Press, Toronto). One hour a week.

33, 34. **French Conversation.** Themes designed to give the student a command of the language of everyday life. A definite and progressive character will be given to these exercises by following the materials contained in Allen and Schoell's "French Life" (Henry Holt), which is prescribed at this point for 1919-1920 only. This section of the work will represent not less than fifty marks for the year. One hour a week.

History of Art. See page 108.

Senior Matriculation:		Courses 5, 6.
First Year, Science:		Courses 5, 6.
First Year, Arts:		Courses 1, 2, 3, 4.
Second Year, Arts:		Courses 7, 8, 9, 10, 11, 12, 13, 14.
Third Year, Arts	(Major):	15, 16, 17, 18, 19, 20, 21, 22, 23, 24.
	(Minor):	Courses 17, 18, 23, 24.
	(General):	Courses 17, 18.
Fourth Year, Arts	(Major):	Courses 25, 26, 27, 28, 29, 30, 31, 32, 33, 34.
	(Minor):	Courses 27, 28, 33, 34.
	(General):	Courses 27, 28.

DEPARTMENT OF GERMAN

J. H. Heinzelmann, B.A., Ph.D..*Professor*

N.B.—For key to system of numbering courses, see page 4.

1, 2. **Elementary German.** The course is offered for those who enter the University without German. Ham and Leonard's German Grammar (Ginn), and Martini's First German Reader will be used. Four hours per week.

3, 4. **Authors.** The purpose of the course is to introduce the student to a few of the simpler masterpieces of German prose, and to increase his practical use of the language. During the first term Storm's Immensee (Scribners) will be used for careful study in class, while Edelsteine, by Minckwitz and Unwerth (Ginn) will be used for home reading. For the second term the text for class study will be, Seidel's Leberecht Hühnchen (Scribners) and for private study, Heyse's L'Arrabbiata (Heath), and Benedix' Der Prozess and Einer muss Heiraten (American Book Co.). Two hours per week.

5, 6. **Oral and Written Composition.** The emphasis will be placed upon correct diction, and upon greater facility in speaking German. The first term's work will cover Boetzinger's Erstes Aufsatzbuch (Holt), pages 1-37, and Dillard's Aus dem deutschen Dichterwald (American Book Co.), Part I. Nos. 4, 10, 16, 18, 30 and 31 are to be memorized. The work of the second term will be, Erstes Aufsatzbuch, pages 38-96, and Part II of the poems, with the memorization of 40, 43, 47, 49, 52 and 57. Two hours per week.

7, 8. **Authors.** In this course works of moderate difficulty will be read, with additional practice in conversation. During the first term, Baumbach's Die Schwiegersohn (Scribners) will be used for detailed study in class, and Wilbrandt's Jugendliebe (Holt) and Arnold's Fritz auf Ferien (Heath) for private reading. For the second term, Goethe's Hermann und Dorothea (Scribners) will be the text for class study, and Ernst's Flachsmann als Erzieher for private study. Two hours per week.

9, 10. **Oral and Written Composition.** Constant practice in speaking the language will be insisted upon in this course. The work for the first term will be Boetzinger's Mundliche und Schriftliche Übungen

(Holt), pp. 1-39, and Dillard's Aus dem deutschen Dichterwald (American Book Co.), Nos. 62-64, 67, 70-71. Of these, Nos. 62, 64 and 71 are to be committed to memory. During the second term the work covered will be Boetzinger, pp. 39-93, and Nos. 75 and 76 of the poems. Two hours per week.

11. **The German Short Story.** Its history and technique in the nineteenth century. Eichendorff: Aus dem Leben eines Taugenichts (Heath), Storm: In St. Jurgen (Ginn); Heyse: Vetter Gabriel (Holt); Keller: Romeo und Julia auf dem Dorfe (Holt); Meyer: Gustav Adolfs Page (Heath). Two hours per week.

12. **Schiller.** The author's life and the critical reading of Kabale und Liebe (Holt), Wallenstein's Tod (Heath), Wilhelm Tell (Holt) and Poems (Macmillan). Two hours per week. (Not given in 1919-20).

13, 14. **Composition.** First term two hours per week; second term one hour.

15. **Lessing.** A general survey of the literary history of Germany in the eighteenth century will accompany the reading and interpretation of Minna von Barnhelm (Holt), Emilia Galotti (Heath), and Nathan der Weise (Ginn). Three hours per week.

16. **History of German Literature to 1800.** Lectures on the main currents of German literature in its earlier periods, illustrated by the reading of selections of some of the more important masterpieces. Two hours per week.

17. **The Romantic School.** The history of German literature from 1800 to 1850, with collateral readings and reports. Four hours per week. (Not given in 1919-1920).

18. **Goethe.** A detailed study of his life and literary development, together with the reading of the following: Poems (Holt), Gotz von Berlichingen (Ginn), Werther (Oxford University Press); Faust, Part I (Heath), Iphigenie (Ginn). Four hours per week.

19. **The German Novel.** Lectures on its history will accompany the reading of typical examples. Two hours per week.

20. **The Modern German Drama.** A study of the development of the German drama in the nineteenth century, with some consideration of related movements in other European countries. About twenty representative dramas will be read and discussed. Four hours per week. (Not given in 1919-20).

21, 22. **Advanced Composition.** First term two hours; second term one hour per week.

History of Art. See page 108.

Senior Matriculation:		Courses 1, 2; or 3, 4; 5, 6.
First Year, Science:		Courses 1, 2; or 3, 4; 5, 6.
First Year, Arts:		Courses 1, 2; or 3, 4; 5, 6.
Second Year, Arts:		Courses 7, 8; 9, 10.
Third Year, Arts	(Major):	Courses 11, 13, 14, 15, 16, 18.
	(Minor):	Courses 11, 13, 18.
	(General):	Courses 11, 16.
Fourth Year, Arts	(Major):	Courses 15, 16, 18, 19, 21, 22.
	(Minor):	Courses 15, 18.
	(General):	Courses 16, 19.

ICELANDIC

Instruction in Icelandic is provided only in Wesley College.

N.B.—For key to system of numbering courses, see page 4.

1, 2. **Grammar.** Finnur Jónsson, Malfraeði (selections). One hour a week.

3, 4. **Authors.** Laxdaela Saga. Three hours a week.

5, 6. **Grammar.** Finnur Jónsson, Malfraeði (complete). One hour a week.

7, 8. **Authors.** Njals Saga; first term, pp. 1-227; second term pp. 228-435. Collateral reading—Finnur Jónsson, History of Icelandic Literature (selected parts). Three hours a week.

First Year, Arts: Courses 1, 2; 3, 4.
Second Year, Arts: Courses 5, 6; 7, 8.

PHILOSOPHY (ENGLISH)

—————————— ... *Professor*
—————————— ... *Lecturer*

N.B.—For key to system of numbering courses, see page 4.

1, 2. **Psychology.** Kitchener, A Beginner's Psychology. First term, Chapters 1 to 5; second term, Chapters 6 to 12. Two hours a week.

1A, 2A. **History of Philosophy.** Weber, History of Philosophy. First term, Greek Period, Part I; second term, Greek Period, Part II. Two hours a week.

3. **Logic.** Creighton, An Introductory Logic (1910 or later edition), Parts II. and III.

4. **Logic.** Mill, Logic, Part III.; Bosanquet, Essentials of Logic.

5. **Psychology.** Stout, Manual of Psychology (University Tutorial Series, new edition), Books I. and II. (with Introduction).

6. **Psychology.** Stout, Manual of Psychology (University Tutorial Series, new edition), Books III. and IV.

7, 8. **History of Philosophy** (Ancient and Mediaeval). Weber, History of Philosophy, Parts I. and II. First Term—Part I. to Neo-Platonism; second term—Neo-Platonism to end of Part II.

9, 10. **History of Philosophy.** (Modern). Weber, History of Philosophy, Part III. First term—Part III. to Kant; second term—Part III., Kant and after.

11. **Metaphysics.** Mackenzie, Outlines of Metaphysics.

13. **Metaphysics.** Locke, Essay on Human Understanding, Book II.

14. **Metaphysics.** Berkeley, Selections (ed. Fraser); Hume, Selections (ed. Aikins).

16. **Metaphysics.** Ward, Realm of Ends.

18. **Metaphysics.** Kant, Critique of Pure Reason.

19. **Ethics.** Plato, Republic.

20. **Ethics.** Mackenzie, Manual of Ethics (University Tutorial Series).

22. **Ethics.** Aristotle, Ethics.

23. **Ethics.** Green, Prolegomena to Ethics (omitting Book III., Chap. 5 and Book IV., Chaps. 3 and 4).

24. **Philosophy of Religion.** Caird, Introduction to the Philosophy of Religion.

25. **Pragmatism.** Pratt, What is Pragmatism?

26. **Political Science.** Bosanquet, Philosophical Theory of the State.

GRADUATE COURSES

27, 28. **Eucken and Bergson.** Eucken, Truth of Religion; Bergson, Creative Evolution, Matter and Memory.

*29, 30. **Psychology.** James, Principles of Psychology; Munsterberg, Psychology and Industrial Efficiency.

*31, 32. **Ethics.** Kant, Theory of Ethics (Abbot). Spencer, Data of Ethics. Mill, Utilitarianism.

*33, 34. **Pessimism.** Schopenhauer, The World, or Will and Idea; Hartmann, Philosophy of the Unconscious.

*35, 36. **Logic.** Keynes, Formal Logic; Adamson, Logic.

*37, 38. **Pragmatism.** James, Will to Believe; Pragmatism. Schiller, Studies in Humanism. Pratt, What is Pragmatism?

*39, 40. **Philosophy of Religion.** Caird, Fundamental Ideas of Christianity; Galloway, Philosophy of Religion.

Second Year, Arts:	Courses 1, 2; 1A, 2A.
Third Year, Arts (1918-1919):	General: Courses 19, 20.
	Minor: Courses 7, 19, 20.
	Major: Courses 7, 8, 19, 20, 24.
	Full Course: Courses 7, 8. 13, 14, 19, 20, 22, 24, 25.
Third Year, Arts (1919-1920):	General: Courses 5, 6.
	Minor: Courses 5, 6, 7.
	Major: Courses 3, 5, 6, 7, 8, 26.
	Full Course: Courses 3, 4, 5, 6, 7, 8, 13, 14, 16, 26.
Fourth Year, Arts (1918-1919):	General: Courses 19, 20.
	Minor: Courses 9, 19, 20.
	Major: Courses 9, 10, 19, 20, 24.
	Full Course: Courses 9, 10, 18, 19, 20, 22, 23, 24, 25.
Fourth Year, Arts (1919-1920):	General: Courses 5, 6.
	Minor: Courses 5, 6, 9.
	Major: Courses 3, 5, 6, 9, 10, 26.
	Full Course: Courses 3, 4, 5, 6, 9, 10, 16, 18, 23, 26.
Graduate, Arts: Major:	Courses 27, 28.
Minor:	Courses 29, 30; or 31, 32; or 33, 34; or 35, 36; or 37, 38; or 39, 40.

PHILOSOPHY (LATIN)

Instruction in Latin Philosophy is provided only in St. Boniface College.

N.B.—For key to system of numbering courses, see page 4.

1. **Logica.** Russo.

3, 4. **Metaphysica.** Russo. (*a*) Ontologia: Cosmologia: (*b*) Anthropologia, Theologia Naturalis.

5, 6. **Monsabré.** Conférences (1875).

7. **Evolution.** Gerard, The Old Riddle and the Newest Answer.

8. **Psychology.** Maher.

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* No classes are offered in these courses. They must be taken extra-murally under direction. See regulation for M.A. degree.

9, 10. **Histoire de la Philosophie.** Vallet, Histoire de la Philosophie pages 1-310. Premier terme—Philosophie orientale, grecque, romaine, alexandrine, philosophie des Pères; second terme—Philosophie scolastique, philosophie de la Renaissance. Deux heures par semaine.

9a, 10a. **History of Philosophy.** Turner, History of Philosophy, pages 1-323. First term—Oriental, pre-Socratic, Socratic and Aristotelian philosophy; second term—Post-Aristotelian, Graeco-Oriental, Patristic and Scholastic philosophy. Two hours a week.

11, 12. **Philosophia Moralis.** (*a*) Lortie, Generalia Morum Principia, Actus Humani, Lex Naturalis, Hominis Officia et Jura; Jus Proprietatis, Jus Sociale, Societas Domestica, Societas Civilis. Sept heures par semaine. (*b*) Lacordaire, Conférences de Notre-Dame, Economie Providentielle de la Réparation; Félix, Le Progrès par le Christianisme. Deux heures par semaine. (Donné en 1920-21.)

11a, 12a. **Philosophia Moralis.** (a) Lortie, Generalia Morum Principia, Actus Humani, Lex Naturalis, Hominis Officia et Jura, Jus Proprietatis, Jus Sociale, Societas Domestica, Societas Civilis. Seven hours a week. (*b*) Rickaby, Ethics and Natural Law, The Family, The State; Leo XIII., Social Problems (Condition of the Working Classes, Christian Constitution of States, Duties of Christians as Citizens, Christian Marriage). Two hours a week. (Given in 1920-21.)

13, 14. **Histoire de la Philosophie.** Vallet, Histoire de la Philosophie, pages 415-546. Premier terme—Philosophie moderne du dix-septième siècle; second terme—Philosophie moderne du dix-huitième et du dix-neuviècle. Deux heurs par semaine. (Donné en 1920-21.)

13a, 14a. **History of Philosophy.** Turner, History of Philosophy, pages 324-660. First term—Third period of Scholastic Philosophy, Modern Philosophy to Kant; second term—Modern Philosophy from Kant to our time, German, Scottish, English, French, Italian and American Philosophy. Two hours a week. (Given in 1920-21.)

15, 16. **Economie Politique.** Premier terme—Hervé-Bazin, Economie Politique (Production, Echange, Répartition, Consommation); second terme, Cathrein, Socialisme (sa Nature, Vices Radicaux, Impossibilité Pratique, Objections). Trois heurs par semaine. (Donné en 1920-21.)

15a, 16a. **Political Economy.** First term—Burke, Political Economy (Production, Exchange, Money, Banking, Trade, Consumption); second term—Cathrein-Gettelmann, Socialism (its Nature, Development, Fundamental Tenets, Impracticability). Three hours a week. (Given in 1920-21).

17, 18. **Physique.** Notions de mécanique, hydrostatique, pesanteur, chaleur, acoustique, optique, électricité et magnétisme. Six heures par semaine.

17a, 18a. **Physics.** Statics, hydrostatics, heat, sound, light, electricity and magnetism. Six hours a week.

19. **Astronomie Elémentaire.** La terre et ses mouvements, le soleil, la lune, les planètes, les comètes, les étoiles, les nébuleuses, co-ordonnées célestes, hypothèses cosmogoniques. Deux heures par semaine.

19a. **Elementary Astronomy.** The earth and its motions, the sun, the moon, the planets, comets, stars and nebulae, celestial co-ordinates, cosmogonic hypotheses. Two hours a week.

20. **Botanique.**

20a. **Botany.**

21, 22. **Chimie.** Chimie élémentaire. Principes élémentaires de la chimie; éléments et composés; lois des combinaisons; atomes et molécules; acides, bases, sels; propriétés des éléments les plus connus et de leurs principaux composés; principes de l'analyse chimique des sels; introduction à la chimie organique. Six heures par semaine avec travail de laboratoire. (Donné en 1920-21.)

21a, 22a. **Chemistry.** Fundamental principles of chemistry; elements and compounds; laws of combination; atoms and molecules; acids, bases, salts; properties of some common elements and their more important compounds; principles of the analysis of simple salts; introduction to organic chemistry. Six hours per week with laboratory work. (Given in 1920-21.)

23, 24. **Sciences Naturelles.** Anatomie et physiologie animales; anatomie et physiologie végétales. Géologie. Notions d'hygiène. (Donné en 1920-21.)

23a, 24a. **Biology.** Animal anatomy and physiology; anatomy and physiology of plants. Geology. Elements of hygiene. (Given in 1920-21.)

Third Year, Arts: Latin Philosophy (French-speaking students): Courses 1; 3, 4; 5, 6; 9, 10; 17,18; 19; 20.
Latin Philosophy (English-speaking students): Courses 1; 3, 4; 7; 8; 9a, 10a; 17a, 18a; 19a; 20a.
Fourth Year, Arts: Latin Philosophy (French-speaking students): Courses 1; 3, 4; 5, 6; 9, 10; 17, 18; 19; 20.
Latin Philosophy (English-speaking students): Courses 1; 3, 4; 7; 8; 9a, 10a; 17a, 18a; 19a; 20a.

Students in St. Boniface College proceeding to the Course in Latin Philosophy above will take the following course in the First and Second Years:

COURS DE PHILOSOPHIE LATINE

(*Pour les élèves de langue française*)

Tous les sujets sont fixes; il n'y a pas de sujets facultatifs.

PREMIERE ANNEE

Français

Préceptes littéraires. P. Mestre: Premier terme—Principaux genres en prose: narration et ses variétés, description, lettre, histoire; conseils pour former à l'art d'écrire. Second terme—Poésie; notions préliminaires, genres principaux: lyrique, épique, dramatique, genres secondaires.

Histoire de la Littérature et modèles français. Premier terme. Mouchard; Histoire de la Littérature, Première et deuxième partie, pp. 1-193. Auteurs: F.G.M.: Morceaux choisis de littérature française, Extraits des principaux écrivains du XVe, XVIe et XVIIe Siècle; Molière Le Bourgeois Gentilhomme. Second terme—Mouchard, Histoire de la Littérature, Deuxième et troisième partie, pp. 193-378 en passant les chapitres V et VIII de la 3e partie.

Auteurs. F.G.-M.: Morceaux choisis, Extraits des principaux écrivains du XVIIIe et XIXe Siècle. Corneille, Polyeucte; Racine, Athalie.

Latin

Grammaire et Thèmes Latins. Revue générale de la grammaire et de la prosodie latine. Ragon, Exercises latins sur la syntaxe: Thèmes et versions d'après l'auteur.

Auteurs. Premier Terme—Cicéron, Catilinaires (extraits); Pro Ligario; Virgile, Enéide, Chant IIe. Second terme—Virgile, Enéide, IIe partie; Cicéron, Pro Archia.

Grec

Grammaire et Thèmes Grecs. Revue de la morphologie et de la syntaxe. Ragon, Thèmes Grecs et versions d'après les auteurs.

Auteurs. Premier terme—S. Jean Chrysostome, Pro Eutropio. Homère, Iliade Chant I, Ie partie. Platon, Criton. Second terme—Homère, Iliade, I, IIe partie. Platon, Criton.

Anglais

Grammaire. Dulac et Bonnet, Grammaire Anglaise—Étude des particules, prépositions, conjonctions, interjections. Premier Terme—pp. 285-356. Second Terme—p. 356 à la fin.

Auteurs. Premier Terme—Macaulay, Warren Hastings. Second Terme—Newman, Saul, Early Days of David, The Tartar and the Turk, The Turk and the Saracen, The Past and the Present of the Ottoman.

Mathématiques

Algèbre. Hall et Knight, Algèbre élémentaire—Chapitres 32 à 39—Premier Terme.

Trigonometrie. Hall et Knight, Trigonométrie plane élémentaire —Premier Terme—Chapitre 1 à 10. Second Terme—Chapitres 11 à 13 et 15 à 18 jusqu'à la page 207.

Histoire

J. Uny, Histoire Moderne, de 1789 à nos jours.

SECONDE ANNEE

Français

Composition et Littérature en Prose. Composition. Verest, Manuel de Littérature. Premier Terme—L'Art dramatique et l'Éloquence, Ie section. Second Terme—l'Éloquence, IIe section.

Histoire de la Littérature et Modèles Français. Premier Terme—Mouchard, Histoire de la Littérature IIIe Partie, Chapitres V., VIII., XI. et XII; IVe Partie. Procès, Modèles Français, Tomes III. et IV., Extraits de Lesage, Bernardin de St Pierre et André Chénier; Racine, Britannicus. Second Terme—Mouchard, Histoire de la Littérature, Ve Partie; Procès, Modèles Français, Tomes III. et IV. Extraits de Victor Hugo, Musset, Bossuet, Bourdaloue, Berryer et Montalembert.

Latin

Thèmes Latins. Mouchard, Thèmes Latins. Ragon, Cent-Vingt Versions Latines.

Auteurs. Premier Terme—Cicéron, Pro Lege Manilia, Ie Partie; Horace, Epitres. Second Terme—Cicéron, Pro Lege Manilia, IIe Partie; Horace, Satires.

Grec

Thèmes Grecs. Ragon, Thèmes Grecs. Deux-cents Versions grecques.

Auteurs. Premier Terme—Démosthène, IIe Philippique; Eschyle, Prométhée enchainé, vers 1-540. Second Terme—Grégoire de Nanzianze, Eloge de Césaire, Ie Partie; Eschyle, Prométhée enchainé, vers 540 à la fin.

Anglais

Grammaire et Composition. Havet, L'Anglais enseigné aux Français. Premier Terme—III., Ie Partie. Second Terme—III., IIe Partie.

Auteurs. Premier Terme—Macaulay, History of England (Morceaux Choisis). Second Terme—Newman, What is a University? University Life, Athens, The Schoolmen, The Strength and Weakness of a University, The Second Spring.

Mathématiques

Geométrie Analytique. La ligne droite, le cercle avec axes rectangulaires. A. Baker, Geométrie Analytique jusqu' à page 105.

Histoire

F. F. des Ecoles Chrétiennes, Histoire du Canada.

LATIN PHILOSOPHY COURSE

(*For English-speaking Students*)

All the subjects are required; there are none optional.

FIRST YEAR

English.

Composition and Rhetoric. Composition—the writing of at least four original compositions during each term with an aggregate of at least 2,000 words for each term. Coppens, Introduction to English Rhetoric,—Literary aesthetics, theory of the beautiful, taste, imagination, theory of literature, poetics, nature and kinds of poetry, lyric and epic poetry, fiction, realism and romanticism in fiction, development of the English novel. First term—pages 1-150. Second term—pages 151-314. Text: Macaulay, Essay on Lord Clive. Two hours a week.

English Literature. Texts: History of English Literature, by W. J. Long (Ginn); Principles and Progress of Poetry, by Gayley and Young (Macmillan).

(1) First term: (a) History—Chapters VII-IX. (b) Poetry—Milton's L'Allegro, Il Penseroso, Lycidas; Dryden's Alexander's Feast: Pope's Rape of the Lock; Gray's Elegy in a Country Churchyard; Goldsmith's Deserted Village; Burn's Tam o' Shanter.

(2) Second term: (a) History—Chapters X-XI. (b) Poetry—Wordsworth's Tintern Abbey, Ode to Duty, London, 1802, Composed upon Westminster Bridge, "It is a Beauteous Evening," "The World is too Much With Us," "Scorn not the Sonnet;" Coleridge's Ancient Mariner; Byron's Prisoner of Chillon, Sonnet—On Chillon, Stanzas from Childe Harold; Shelley's Ode to the West Wind, To a Skylark;

Keat's Ode to a Nightingale, On First Looking into Chapman's Homer, On the Grasshopper and the Cricket; Tennyson's Oenone, The Lady of Shalott, Ulysses; Browning's Home Thoughts from Abroad, Home Thoughts from the Sea, My Last Duchess, Andrea del Sarto; Arnold's Rugby Chapel, Dover Beach. Two hours a week.

Latin.

Composition and Sight Translation. Bradley-Arnold's Latin Prose Composition. Sight translation based on the authors read.

Authors. First Term—Cicero, In Catilinam (extracts). Vergil, Aeneid II (1st part). Second Term—Cicero, Pro Archia; Vergil, Aeneid II (2nd part).

Greek.

Composition and Sight Translation. Pitman's Greek Prose Composition. First term—Exercises 1-20; Second term, exercises 20-44. Sight translation based on the authors read.

Authors. First Term—St. John Chrysostom, Pro Eutropio; Plato, Crito (1st part); Homer, Iliad I (1st part). Second Term—Plato, Crito (2nd part); Homer, Iliad I (2nd part).

French.

Grammar, Composition and Sight Translation. First term—Fraser and Squair, High School French Grammar (to page 277); Composition; Sight Translation. Second term—Fraser and Squair, High School French Grammar (page 278 to end); Lazare, Elementary French Composition: Sight Translation; Dictation.

Authors. First Term—Bazin, Contes choisis. Second Term—Molière, L'Avare.

Mathematics.

Algebra. Hall and Knight, Elementary Algebra—Chapters 32 to 39.

Trigonometry. Hall and Knight, Elementary Plane Trigonometry—First Term—Chapters 1 to 10; Second Term, Chapters 11 to 13, and 15 to 18, as far as page 207.

History.

Guggenberger, General History of the Christian Era, Vol. II.

SECOND YEAR

English.

Composition and Rhetoric. Composition—the writing of at least two original compositions during each term with an aggregate of at least 1,500 words for each term. Coppens, Introduction to English Rhetoric, Part II., Art of Oratorical Composition—Oratory, nature and types of oratory, division of the oration, style in public speaking, methods of oratorical composition, principles of argumentation. First term—pages 1-140. second term—pages 141-307. Text: Newman, Second Spring. Two hours a week.

English Literature. First term—(a) Tennyson, Idylls of the King (selections). (b) Lowell, Vision of Sir Launfal; (c) Arnold, Sohrab and Rustum. (d) Scott, Kenilworth. (e) Hardy, Far from the Madding Crowd.

Second term—(a) Chaucer, Prologue to the Canterbury Tales. (b) Shakespeare, Twelfth Night and King Lear. Two hours a week.

Latin.

Composition and Sight Translation. Bradley-Arnold's Latin Prose Composition, Exercises 35-50. Sight Translation based on the authors read.

Authors. First Term—Cicero, Pro Lege Manilia (1st part); Horace, Epistle. Second Term—Cicero, Pro Lege Manilia (2nd part); Horace, Satires.

Greek.

Composition and Sight Translation. Sidgwick's Greek Prose Composition, Part I. Sight translation based on the prose author read.

Authors. First Term—Demosthenes Philippic II; Aeschylus, Prometheus Bound, lines 1-540. Second Term—St. Gregory of Nanzianzus, Funeral Oration of Caesarius (1st part); Aeschylus, Prometheus Bound, lines 541 to the end.

French.

Authors. Selections from Bossuet. Racine, Athalie. Mansion, Extracts for French composition.

Mathematics.

Analytical Geometry. Analytical Geometry of the straight line and the circle for rectangular axes. Baker's Analytical Geometry for Beginners, to page 105, omitting §§ 17, 23, 26 (alternate proof accepted for § 27), 28 and 45.

History.

Guggenberger, General History of the Christian Era, Vol. III.

DEPARTMENT OF HISTORY

Chester Martin, M.A., B.Litt.	*Professor*
Ralph Flenley, M.A., B.Litt.	*Assistant Professor*
Norman Macdonald, M.A.	*Interim Lecturer*

N.B.—For key to system of numbering courses, see page 4.

1. **Ancient History.** A. J. Grant, A History of Europe (Longmans), Part I., supplemented by lectures and class work.

2. **Mediaeval History.** A. J. Grant, A History of Europe (Longmans), Part II., supplemented by lectures and class work.

For Courses 1 and 2 students are advised to use the historical atlases in Everyman's Library—Classical History and European History.

3, 4. **Modern History.** Modern History, 1400-1648, and 1648 to the present time. Adams' Mediaeval and Modern European History, pp. 157-458, supplemented by lectures and class work. Extra-mural students are required, and intra-mural students are advised, to read Robinson's History of Western Europe, Vol. 2.

9, 10. **British Political History.** Students are expected to begin with a reading knowledge of Green's Short History of the English People or of York-Powell and Tout's Small History of England. Two or three books on special periods are strongly recommended for reading during the summer vacation: Davis' England under the Normans and Angevins, for instance, and Fisher's Political History of England, 1485-1547. For the essay work during the session, students will be referred to the following series and to other special books: Political History of England, 12 vols., ed. Poole (Longmans, Green & Co.); History of England, 6 vols., ed. Oman (Methuen & Co.); Gardiner and Firth: History of England 1603-1658; Firth: Cromwell; Ranke: History of England Principally in the Seventeenth Century; Seeley: Growth of British Policy; Lecky: History of England; Macaulay: Essays and History; Froude: History of England; Trevelyan: American Revolution; Twelve English Statesmen Series; Plummer's Alfred, Baede and the Anglo-Saxon Chronicles (translations); Freeman: Norman Conquest; Social England; Burke: Speeches; Williams: Chatham; Dictionary of National Biography, etc.

11, 12. **British Constitutional History.** Emphasis will be placed upon the Anglo-Saxon period, the centralization of law under Henry II, the evolution of parliamentary representation, the revolutions against the Stuarts; the evolution of cabinet and party government and parliamentary reform. The documentary ground work for both lectures and essays will be found in: Stubb's Select Charters, (new edition, ed. Davis); Prothero: Statutes and Constitutional Documents, 1559-1625. Gardiner: Constitutional Documents of the Puritan Revolution, 1628-1660; Robertson: Select Statutes, Cases and Documents, 1660-1832; Dicey: Law of the Constitution; Maitland: Constitutional History of England; Stubbs: Constitutional History of England. Students should possess the first two and the last two for reference. A special course of lectures will be given on Sources, selected from Stubbs' Select Charters, Prothero, Gardiner, and documents comprising the Revolution Settlement.

13, 14. **General European History, 1789-1878.** The work of the course will be grouped around special phases or subjects, among the more important of which are: The French Revolution; Napoleon; Europe after 1815; Greek Independence; the Revolutions of 1848; the Crimean War and the Eastern Question; the Union of Italy; the Foundation of the German Empire; the Franco-German War; the Treaty of Berlin. Some study will be made of the constitutional documents for the period, contained in "Constitutions and Documents for the History of France, 1789-1907," edited by F. M. Anderson. The general survey of the period may be made from:—Rose, "The Revolutionary and Napoleonic Era"; Alison Phillips, "Modern Europe"; copies of which should be obtained by students taking the course. An historical atlas is essential to the study of the period. The one recommended is, Ramsay Muir, "Historical Atlas for Students" (Philips). Reference will also be made for essays and general reading to large works and to books dealing with special topics, e.g., The Cambridge Modern History; Fyffe, History of Modern Europe; Seignobos, Political History of Contemporary Europe; Young, Travels in France; Burke, Reflections on the French Revolution; Carlyle, French Revolution; Acton, Lectures on the French Revolution; Rose, Life of Napoleon; Mahan, Influence of Sea Power on the French Revolution and Empire; Life of Napoleon; Seeley, Life of Stein; Metternich, Memoirs; Fisher, Republican Tradition in Europe; Bolton King, History of Italian Unity; Thayer, Life of Cavour; Bismarck, Reminiscences; Headlam, Life of Bismarck.

15, 16. **Canadian History, 1763-1867.**—The following outline will suggest the chief phases to be considered: The period from the cession to the Constitutional Act in some detail; the growth of parties; the War of 1812; the opening of the West; Rebellion in Upper and in Lower Canada; Durham's Report; Responsible Government; Confederation; Manitoba. The following will be among the chief books of reference: Shortt and Doughty, Constitutional Documents, 1763-1791; Doughty and McArthur, Documents, 1791-1818; Egerton and Grant, Canadian Constitutional Development; Oliver, The Canadian North-West, 2 vols.; Durham's Report, ed. Lucas; Pope, Confederation Documents, Confederation Debates; Egerton, Canada, 1763-1901; Lucas, War of 1812; Garneau, Histoire du Canada; Shortt and Doughty (ed.), Canada and Its Provinces, 23 vols.; Wrong and Langton (ed.), Chronicles of Canada Series; The Makers of Canada Series.

17, 18. **British History and Colonial Expansion from 1485 (in outline).** The following textbooks are prescribed: Green, Short History of the English People; Bagehot, The English Constitution; Seeley, Expansion of England; Egerton, Origin and Growth of the English Colonies; Muir, Students' Atlas of British History. For essay work students will also be referred to the following books: Innes, England Under the Tudors; Trevelyan, England Under the Stuarts; G. C. Robertson, England Under the Hanoverians; J. A. R. Marriott, England in the Nineteenth Century; Egerton, Short History of Colonial Policy; Maitland, Constitutional History of England; Froude, Elizabethan Seamen; Firth, Cromwell; Morley, Walpole; Rosebery, William Pitt; Morley, Gladstone; Macaulay, Essays on Chatham, Pitt, Clive, etc.

19, 20. **Canadian History.**—Outlines of Canadian History from the period of early discovery to Confederation. The following textbooks are prescribed: Lucas, Canada to 1763 (Historical Geography of the British Colonies, vol. 5, part I); Egerton, Canada 1763-1901 (Historical Geography of the British Colonies, vol. 5, part II); Durham's Report; Egerton and Grant, Canadian Constitutional Development. For the essay work during the session students will be referred to many of the books mentioned under Course 16.

History of Art. See page 108.

First Year, Arts:	Courses 1, 2.
Second Year, Arts:	Courses 3, 4.
Third Year, Arts:	Major, Courses 9, 10; 11, 12.
	General, Courses 17, 18.
Fourth Year, Arts:	Major, Courses 13, 14; 15, 16.
	General, 19, 20.

The periods outlined for the History Majors of the Third and Fourth Years are covered by formal lectures supplemented by tutorial work with small groups of students. Essays, prepared and discussed twice a week with the instructor in charge, are intended to cover as far as possible the chief problems under consideration.

The same plan is followed on a smaller scale for the General Course, except that definite textbooks are prescribed.

DEPARTMENT OF POLITICAL ECONOMY AND POLITICAL SCIENCE

Archibald Brown Clark, M.A.	*Professor*
————————	*Assistant Professor*
Lily A. McCullough, M.A., LL.B.	*Assistant*

N.B.—For key to system of numbering courses, see page 4.

1, 2. **Economics.** The Character and Scope of Political Economy. Methods of Investigation; Economic Laws; Relation of Economic Science to Practice; Leading Principles of Consumption, Production and Distribution of Wealth. Outlines of English Economic History. First Term: Nicholson, "Elements of Political Economy," Introduction and Book I; Ashley, "Economic Organization of England," Chapters 1-4. Second Term: Nicholson, Book II; Ashley, Chapters 5-8. Four hours a week.

3, 4. **Economic Theory.** A survey of the leading principles of Political Economy, together with the chief landmarks in the history of Economic Theory. A more intensive study of the Theory of Exchange, including Value, Money, Credit, Currency and Banking, Commercial Crises, the Money-Market, the Rate of Interest and the Rate of Discount. First Term: Nicholson, "Elements of Political Economy," Books I and II (revision), Book III, chapters 1-4; Mill, "Principles of Political Economy," Book III, chapters 1-6 and 14-16; L. L. Price, "Political Economy in England," chapters 1-4. Second Term: Nicholson, Book III, chapters 5-12; Mill, Book III, chapters 7-13 and 23-24, 26; H. Withers, "The Meaning of Money"; L. L. Price, chapters 5-8. Three hours a week.

5, 6. **Foreign and Colonial Trade Policy—History and Theory.** The historical development of the Theory of Foreign Trade, with special reference to Adam Smith's Critique of the Mercantile System; the Theory of International Trade and International Values; Free Trade and Protection; the Foreign Exchanges. First Term: Adam Smith, "Wealth of Nations,"Book II, chapter 5; Book III, chapter 1; Book IV, chapters 1-2; Nicholson, "A Project of Empire," chapters 1-8, 11; "Elements," Book III, chapter 13, secs. 1-4, chapter 15; Book V, chapter 7; Mill, "Principles," Book III, chapter 17; Book V, chapter 10, sec 1; Bastable, "Theory of International Trade," chapters 1, 8, 9. Second Term: Adam Smith, Book IV, chapters 3-8; Nicholson, "Project of Empire," chapters 7-16; "Elements," Book III, chapter 13, secs. 5, 6, chapter 14; Book V, chapter 9; Mill, Book III. chapters 18-22, 25; Bastable, chapters 2-7, 10, and appendices; Withers, chapter 10. Two hours a week.

7, 8. **Economic History.** The chief landmarks in English Economic History in Mediaeval times, and a more detailed study of the Modern period; The Manor; The Gilds; The Black Death and the Peasants' Revolt; Transition from Mediaeval to Modern Economic Conditions; The Elizabethan Regulation of Industry and Commerce; The Poor Law; Foreign Trade Companies; Colonisation and Colonial Policy; Origin and Development of Banking; The Industrial Revolution; Trade Unionism; Factory Legislation; The Free Trade Movement. First Term: Ashley, "Economic Organization of England," chapters 1-5; Cunningham, "Growth of English Industry and Commerce," vol. II, Part I, pp. 1-402. Second Term: Ashley, chapters 6-8; Cunningham, Part I, pp. 403-608, and Part II. Two hours a week.

9, 10. (Minor) **Economic Theory.** A survey of the leading principles of Economics, together with the chief landmarks in the history of Economic Theory. A more intensive study of the Theory of Exchange, including Value, Money, Credit, Banking, the Rate of Interest and the Rate of Discount, International Trade, and the Foreign Exchanges. First Term: Nicholson, "Elements of Political Economy," Books I and II (revision), Book III, chapters 1-4, chapter 13, secs. 1-4, chapter 15; Book V, chapter 7; Mill, "Principles of Political Economy," Book III, chapters 1-6, 11-17; Book V, chapter 10, sec. 1; Bastable, "Theory of International Trade," chapters 1, 8, 9; L. L. Price, "Political Economy in England," chapters 1-4. Second Term: Nicholson, Book III, chapters 5-12; chapter 13, secs. 5, 6; chapter 14;

Book V, chapter 9; Mill, Book III, chapters 7-13, 18-26; Withers, "The Meaning of Money"; Bastable, chapters 2-7, 10 and appendices; L. L. Price, chapters 5-8. Four hours a week.

11, 12 (General) **Economic Theory.** The leading principles of Economics, together with a brief survey of the history of Economic Theory. A more detailed study of the Theory of Exchange, including Value, Money, Credit, Banking, the Rate of Interest and the Rate of Discount, International Trade and the Foreign Exchanges. First Term: Nicholson, "Elements," Books I and II (revision); Book III, chapters 1-4, chapter 13, secs. 1-4, chapter 15; Book V., chapter 7; L. L. Price, "Political Economy in England," chapters 1-4. Second Term: Nicholson, Book III, chapters 5-12, chapter 13, secs. 5, 6, chapter 14; Book V., chapter 9; Withers, "The Meaning of Money"; L. L. Price, chapters 5-8. Three hours a week.

13, 14. **Political Economy** (for Accountancy Students). The leading principles of Economics, together with the chief landmarks in the history of Economic Theory. A general survey of the principles governing Production and Distribution of Wealth; and a more intensive study of the Theory of Exchange, including Value, Money, Credit, Banking, the Money-Market, the Rate of Interest and the Rate of Discount, International Trade and the Foreign Exchanges. First Term: Nicholson, "Elements of Political Economy," a general knowledge of Books I and II, with a more exact knowledge of Book III, chapters 1-4, chapter 13, secs. 1-4, chapter 15; Book V, chapter 7; Bastable, "Theory of International Trade," chapters 1, 8, 9. Second Term: Nicholson, Book III, chapters 5-12, chapter 13, secs. 5, 6, chapter 14; Book V, chapter 9; Withers, "The Meaning of Money"; Bastable, chapters 2-7, 10, and appendices. Four hours a week.

15, 16. **Economic Theory.** (a) A critical study of some of the more difficult problems in Economic Theory and the History of Theory, and (b) Application of Economic Principles to the more important present-day Economic Problems. Two hours a week.

For reading in supplement of the lectures, references will be given to the works of the leading authorities on the subjects under discussion.

17, 18. **Economic Functions of Government, and Public Finance.** The principles, methods, and limitations of Governmental Interference; The characteristics and principles of Taxation and Public Expenditure; The Incidence of Taxation; Provincial and Municipal Taxation in Western Canada; National Credit and National Debts. First Term: Adam Smith, "Wealth of Nations," Book V, chapter 1; Mill, "Principles," Book V, chapters 1, 8-11; Nicholson, "Principles," vol. III, Book V, chapters 1-4, 14, 19. Second Term: Adam Smith, Book V, chapters 2, 3; Mill, Book V, chapters 2-7; Nicholson, Book V, chapters 5-13, 15-18; Seligman, "Essays in Taxation," and certain chapters in the same author's "Shifting and Incidence of Taxation," and in Bastable's "Public Finance." Three hours a week.

19, 20. **Political Science.** (a) **Political Theory.** A critical study of Political Theories in their relation to actual political development, special attention being given to the political thought of Hobbes, Locke, Rousseau, Bentham, and J. S. Mill. First Term: Pollock, "History of the Science of Politics," pp. 1-79; Hobbes, "Leviathan," part I, chapters 13-15, part II; Locke, "Civil Government," Book II; Sidgwick, "Development of European Polity," Lectures 24, 25. Second Term: Pollock, pp. 79-136; Rousseau, "Contrat Social" (Eng. Trans.); Mill, "On Liberty;" Sidgwick, Lecture 26; L. T. Hobhouse, "Liberalism;" Maine, "Early History of Institutions," Lectures 12, 13; Bryce, "Studies in History and Jurisprudence," Essays 9, 10, 11. Two hours a week.

21, 22. **Political Science.** (b) **Comparative Politics.** The Nature of the State. Forms of Government: Cabinet and Presidential Systems; Federal Government. Constitution of the State. Organization of Government: The Legislature: Bicameral and Unicameral Systems; The Executive; The Judiciary; Distribution of Powers. Representative Government; Parties and Party Government; The Electorate. Local Government. Government of Dependencies.

For reading in supplement of the lectures, students will be referred to the relevant parts of works by the leading authorities, such as: Sidgwick: "Elements of Politics," Part 2; Mill: "Representative Government;" Bagehot: "English Constitution;" Lowell: "The Government of England" and "Governments and Parties in Continental Europe;" Bryce: "The American Commonwealth;" Woodrow Wilson: "The State;" Lewis: "Government of Dependencies;" Keith: "Responsible Government in the Dominions" and "Imperial Unity and the Dominions." Two hours a week.

23, 24 (Minor) **Economic and Political Theory.** A study of the nature, measurement, and governing principles of Economic Progress, together with the Economic Functions of Government and Public Finance, and Modern Political Thought. First Term: Nicholson, "Principles of Political Economy," vol. III, Book IV, chapters 1-3; Book V, chapters 1-4, 14, 19; Mill, "Principles," Book V, chapters 1, 8-11; Adam Smith, "Wealth of Nations," Book V, chapter 1; L. T. Hobhouse, "Liberalism," chapters 1-4. Second Term: Nicholson, Book IV, chapters 4-7; Book V, chapters 5-13, 15-18; Mill, Book V, chapters 2-7; Adam Smith, Book V, chapters 2, 3; Hobhouse, chapters 5-9. Four hours a week.

25, 26 (General) **Economic Theory.** The nature, measurement and governing principles of Economic Progress; Governmental Interference—its Principles, Methods, and Limitations; The Characteristic, and Principles of Taxation and Public Expenditure; Incidence of Taxation; National Credit and National Debts. First Term: Nicholson, "Principles of Political Economy," Book IV, chapters 1-3; Book V, chapters 1-4, 14, 19; Mill, "Principles," Book V, chapters 1, 8, 10, 11. Second Term: Nicholson, Book IV, chapters 4-7; Book V, chapters 5-13, 15-18; Mill, Book V, chapters 2-7. Three hours a week.

27, 28. **English Constitutional Law.** (See Law Calendar.) Two hours a week. *Mr. R. F. McWilliams.*

29, 30. **Canadian Constitutional Law.** (See Law Calendar.) Two hours a week. *Mr. R. F. McWilliams.*

GRADUATE COURSES

(*Lectures may not be offered on these Courses in* 1919-20.)

31, 32. **Political Economy** (Principal Subject). Marshall, "Principles of Economics." Books of reference (critical); Haney, "History of Economic Thought"; Keynes, "Scope and Method of Political Economy"; Beveridge, "Unemployment"; Seligman, "The Income Tax." (Two Papers and Thesis.)

33, 34. **Economic History** (Subordinate Subject). Nicholson, "Rents, Wages and Profits in Agriculture"; Taussig, "Some Aspects of the Tariff Question"; Conant, "History of Modern Banks of Issue." (One Paper).

35, 36. **Political Science** (Subordinate Subject). Dicey, "Law and Public Opinion in England"; MacCunn, "Six Radical Thinkers";

E. Barker, "Political Thought in England from Herbert Spencer to the Present Day." (One Paper).

Note.—Candidates for the M.A. Degree in this Department may combine Political Economy with *either* (a) Economic History or (b) Political Science.

Second Year, Arts: Courses 1, 2.
Third Year, Arts: Major: Courses 3, 4; 5, 6; and either 7, 8; or 27, 28.
Minor: Courses 9, 10; 5, 6, with 7, 8.
General: Courses 11, 12.
Fourth Year, Arts: Major: Courses 15, 16; 17, 18; and one of the pairs 19, 20; 21, 22; 29, 30.
Minor: Courses 23, 24; 19, 20, with 21, 22.
General: Courses 25, 26.
Graduate Courses, Arts: 31, 32; 33, 34; 35, 36.
Special Courses: Accountancy: Courses 13, 14.
Banking: Courses 3, 4.
Insurance: Part of Courses 17, 18.
(Two hours a week. Half of Joint Minor Course with Department of Mathematics.)

DEPARTMENT OF MATHEMATICS AND ASTRONOMY

Neil Bruce MacLean, D.S.O., M.A., F.R.A.S.C.	*Professor*
Norman R. Wilson, M.A., Ph.D.	*Professor*
Lloyd A. H. Warren, M.A., Ph.D., F.R.A.S.	*Assistant Professor*
William Tier, M.A.	*Assistant Professor*
Harold R. Kingston, M.A., Ph.D.	*Assistant Professor*

N.B.—For key to system of numbering courses, see page 4.

PURE MATHEMATICS

1. **Algebra.** A. T. DeLury's Intermediate Algebra (Copp, Clark Co.) to page 130, omitting Chapter IV. Four hours per week.

4. **Analytical Geometry.** The analytical geometry of the straight line, circle, parabola, ellipse and hyperbola. Crawley and Evans' Analytical Geometry (University of Pennsylvannia, Philadelphia) to page 106. Four hours per week.

5, 6. **Plane Trigonometry.** Playne and Fawdry's Practical Trigonometry (Copp, Clark Co.). Students are required to become familiar with the use of tables in the solution of problems. "Logarithmic and other Tables," by F. Castle (Macmillan Co.) are recommended, for students in Arts and Science, and "Logarithmic and other Tables," by Alex. McAulay (Macmillan & Co.) for Engineering students. Two hours per week.

7. **Synthetic Solid Geometry.** Hall and Stevens' "A School Geometry," Part VI (Macmillan Co.). Theorams 81, 83, 84, 91, 92, 94, 97, 98, and pages 383-412; or the corresponding work in Betz and Webb's Solid Geometry (Ginn & Co.). Two hours per week.

10. **Algebra.** The binomial, exponential and logarithmic series, other series; surds and imaginary quantities; mathematical induction; undetermined coefficients; partial fractions; limiting values and vanishing fractions. This work may be found in Hall and Knight's Higher

Algebra. Another text book may be announced before the opening of the second term of the session 1919-20. Two hours per week.

11. **General Mathematics.** A short course in mathematics, especially designed for students in Senior Matriculation for Medicine. Arithmetical progression; geometrical progression, with applications to compound interest, annuities, debentures, sinking funds and life insurance: A brief introduction to Trigonometry up to the solution of right-angle triangles; graphs of statistics; analytical geometry of the straight line, and those properties of the circle, the parabola and ellipse which have practical applications. Four hours per week.

13. **Analytical Geometry, Plane and Solid.** A continuation of Course 4. Analytical Plane Geometry, with a brief introduction to Analytical Solid Geometry. Crawley and Evans' Analytical Geometry, page 107 to the end. Four hours per week.

16. **Calculus.** An elementary course in Differential and Integral Calculus with practical applications. Differentiation of algebraic and trigonometric functions, with corresponding integrations, measurement of rates, motion in curved paths, maxima and minima, definite integrals, areas and lengths of curves, volumes and surfaces. March and Wolff's Calculus. Four hours per week.

17. **Analytical Geometry.** Selections from Crawley and Evans' Analytical Geometry, page 107 to the end. Two hours per week. (For the session 1919-20, three hours per week).

19. **Algebra.** Elementary Determinants and their application to the solution of linear equations; continued fractions; hyperbolic functions; graphs of algebraic, trigonometric, inverse, exponential, logarithmic and hyperbolic functions. Two hours per week. (For the session 1919-20 three hours will be given to the work of Courses 10 and 19).

21. **Calculus.** A continuation of Course 16 to be given in 1920-21 and following sessions to students of Engineering. Differentiation of transcendental functions; total and partial derivatives; equations of tangents and normals; lengths of subtangents, subnormals, etc.; curvature and radius of curvature; evolutes; expansions; asymptotes; integration; applications to areas, surfaces, volumes, etc. Three hours per week.

24. **Differential Equations.** A short course specially adapted to meet the needs of students in Engineering. Text book announced later. Two hours per week. (In 1919-20 students of the Third Year Electrical Engineering will take Course 39).

25, 26. **Algebra—Determinants and Theory of Equations.** A continuation of Course 10. Hall and Knight's Higher Algebra, Chapters 19-26 inclusive, Chapter 29 and Chapters 33-35 inclusive. Two hours per week. In 1919-20 both 25 and 26 will be given in the second term. *Assistant Professor Tier.*

27. **Analytical Solid Geometry.** An elementary course in Analytical Geometry, of three dimensions. One hour per week. *Professor Wilson.*

29, 30. **Differential and Integral Calculus.** An elementary course, with practical applications (a) Differentiation; measurement of rates; motion in curved paths; maxima and minima; partial derivatives; tangents and normals; curvature; evolutes; expansions, formation of differential equiations; integration; areas and lengths of curves, volumes and surfaces. Four hours per week first term; two hours per week second term. (b) nth derivatives, Leibnitz' theorem, expansions, indeterminate forms, maxima and minima, tangent planes and lines, normals; integral forms, reduction formulae, areas and volumes of surfaces by double and triple integration. Two hours per week second term. (Topics under (b) are not included in the work for Engineering students). March and Wolff's Calculus. References: "Calculus made Easy," by F. R. S., and Osborne's Calculus. *Professor Wilson.*

31. **Spherical Trigonometry.** Inverse notation, derivation of formulae, solution of the spherical triangle, areas of spherical triangles and polygons, applications to practical problems. Moritz' Spherical Trigonometry. Two hours per week. *Asst. Professor Tier.*

33. **Higher Plane Trigonometry.** A continuation of Course 5, 6. Quadrilaterals, inverse functions, functions of sub-multiple angles, general solutions of trigonometric equations, limits, De Moivre's Theorem, complex quantities, functions expressed as series, summation of series, factorization. Hall & Knight's Trigonometry; Todhunter and Hogg's Trigonometry. Two hours per week. *Assistant Professor Tier.*

37, 38. **Advanced Calculus.** A continuation of Course 29, 30. (a) Differential Calculus. Expansions; maxima and minima; various equations of a curve; derived curves; envelopes; asymptotes; singular points. (b) Integral Calculus. Volumes by triple integration; definite integrals; beta and gama functions; pedals and roulettes; Steiner's and Holditch's Theorems; the planimeter. Three hours per week. *Asst. Professor Kingston.*

39, 40. **Differential Equations.** Methods used in elementary practical applications to physical and engineering problems (first term). Symbolic methods, geometrical applications and elementary general theory (second term). Murray, Differential Equations. Two hours per week. *Professor Wilson.*

41. **History of Mathematics.** The historical development of number systems, arithmetic, algebra, geometry, trigonometry and calculus, from the earliest times to the present. Two hours per week.

44. **Advanced Analytical Geometry.** Advanced work in conic sections, and an extension of the work in solid geometry of Course 13. The Department has a considerable number of the splendid thread and plaster models of Brill, for illustrating the teaching of geometry of three dimensions. Two hours per week.

45, 46. **Projective Geometry.** A course in modern projective geometry to be given in the session 1920-1921. Detailed outline and text book announced later. Two hours per week.

APPLIED MATHEMATICS.

52. **Mensuration.** The mensuration of plane and solid figures. Superficial area, and volume of the pyramid, cone, cylinder, sphere, wedge, frustums, segments, zones, sectors; the prismoidal formula; applications to problems in connection with the earth; lengths of open and crossed belts. Betz and Webb's Solid Geometry. Two hours per week.

54. **The Theory of Errors and Method of Least Squares.** The general principles of probability, the law of error, direct measurements of equal and different weights, mean square and probable errors, indirect measurements; conditioned observations; applications to empirical constants and formulae. One hour per week.

55, 56. **Analytical Mechanics.** Centres of gravity, moments of inertia, pressure and centres of pressure of fluids, statics of flexible cords, cords on rough surfaces; rectilinear and curvilinear motion, pendulums; projectiles; rotary motion; work and energy, friction, dynamics of rigid bodies; impact. Hancock, Applied Mechanics for

Engineers. Two hours per week. (For Session 1919-20, this course will be given in four hours per week in second term.) *Asst. Professor Warren.*

57, 58. **Analytical Statics and Dynamics.** Vectors, centroids, flexible cords, friction systems of particles and rigid bodies, equilibrium on a smooth or rough plane curve, skew curve or surface, centres of gravity, work, attraction and potential, stable and unstable equilibrium; velocity, acceleration, relative motion, rectilinear and curvilinear motion, motion in resisting media, projectiles, law of gravitation, central orbits, constrained motion, pendulums, rotary motion, energy, dynamics of rigid bodies, impact. Three hours per week. *Assistant Professor Warren.*

61, 62. **Celestial Mechanics.** Curvilinear motion, central orbits, derivation of Newton's law; determination of the orbit from the law of force; potential and attraction of bodies; the problem of two bodies; the problem of *n* bodies; the problem of three bodies; Lagrangian straight line and equilateral triangular solutions of the three body problem, surfaces of zero relative velocity, etc.; geometrical and analytical consideration of perturbations. Moulton, Introduction to Celestial Mechanics. Three hours per week.

ACTUARIAL SCIENCE

71, 72. **The Mathematical Theory of Investment.** Interest and discount; equation of payments; annuities certain; amortization of debts; amortization schedules; valuation of bonds, debentures and other securities; depreciation; building and loan associations; Skinner's Mathematical Theory of Investment. Institute of Actuaries' Text Book, Part I. Two hours per week. (For the session 1919-20, this work will be covered in three hours per week during the first term). *Assistant Professor Warren.*

73, 74. **Principles of Life Insurance.** A general course on the principles and practices of life insurance, including the theory of probability, mortality tables, life annuities, classification of insurance policies, net premiums, loading, reserves, surplus, dividends; actuarial selection of risks, substandard lives, fraternal and assessment insurance, industrial insurance. Notes on Life Insurance by E. B. Falcker (Spectator Company). Institute of Actuaries' Text Book, Part II. Two hours per week. *Assistant Professor Warren.*

76. **Finite Differences.** A course of lectures on the Calculus of Finite Differences and the theory of operators. Fundamental difference forms, factorial expansions, symbols of operation, Herschel's and Maclaurin's Theorems, interpolation formulae, statistical applications, approximations, mechanical quatratures, finite integration, Euler-MacLaurin sum series, convergency, difference equations. Burn and Brown, The Elements of Finite Differences. One hour per week. (For the session 1919-20 this course will be given in connection with Course 38. *Assistant Professor Kingston.*

78. **The Theory of Errors and Method Least Squares.** See Applied Mathematics, Course 54.

ASTRONOMY

91, 92. **General Astronomy.** The constellations; the telescope; systems of co-ordinates; problems of the earth; Kepler's laws; gravitation; tides; moon; eclipses; time; solar system; comets and meteors; sun; stars; nebulae; evolution of solar system; spectrum analysis. Moulton, Introduction to Astronomy. Two hours per week lectures. One hour per week laboratory work or evening observations. *Assistant Professor Kingston.*

93. **Descriptive and General Astronomy.** A short course specially devoted to those parts of astronomy necessary in surveying. The shape and motions of the earth; the constellations; systems of co-ordinates; refraction; aberration; parallax, eclipses; time, equation of time, conversion of time. General Astronomy by C. A. Young. (Ginn & Co.) new edition. Two hours per week. Evening observations. *Professor MacLean* and *Assistant Professor Warren.*

96. **Mathematical and Practical Astronomy.** The solution of the astronomical triangle; time; conversion of time; the ephemeris; determination for any date of the apparent places of stars from the star catalogues; corrections for refraction, parallax, diurnal aberration and dip, to be applied to observed co-ordinates; description and working principles of the sextant, transit theodolite, observatory transit, and zenith telescope; the errors of these instruments and methods of dealing with them; methods of determining latitude, time, longitude and azimuth; practical observations and their reduction. Two hours per week. *Professor MacLean.*

97, 98. **Celestial Mechanics.** See Applied Mathematics, Course 61, 62.

GRADUATE COURSES.

The following courses in graduate study will be offered from time to time: A selection will be made at the beginning of each session to meet the needs and qualifications of students desiring such work.

Elliptic Integrals and Fourier Series. *Professor MacLean.*
Calculus of Variations (Elementary Course). *Professor Wilson.*
History of Mathematics. *Professor Wilson.*
Theory of Functions of a Real Variable. *Professor Wilson.*
Theory of Functions of a Complex Variable. *Assistant Professor Warren.*
Celestial Mechanics. *Assistant Professor Warren.*
An Advanced Course in Actuarial Science. *Assistant Professor Warren.*
Modern Analytical Geometry. *Assistant Professor Kingston.*
Advanced Theory of Conics. *Assistant Professor Kingston.*
Higher Plane Curves. *Assistant Professor Kingston.*

Senior Matriculation for Medicine: Course 11
Senior Matriculation for Engineering: Courses 1; 4; 5, 6; 7; 10.
First Year, Arts: Required of all students, Courses 1; 4.
  Mathematics Option, Courses 5, 6; 7; 10
Second Year, Arts, Mathematics: Courses 13; 16.
Second Year, Arts, Astronomy: Courses 91, 92.
Third Year, Arts. For Session 1919-20.
  Full Course*: Courses 25, 26; 27; 29, 30; 31; 33, 55, 56; 71, 72.
  Major: Courses 27; 29, 30; and a selection from 25, 26; 55, 56; 71, 72.
  Minor: Courses 29, 30; and a selection from 25, 26; 27; 55, 56; 71, 72.
  Div. A, Nat. and Phys. Science: Courses 27; 29, 30; 55, 56.
  Div. B, Nat. and Phys. Science—Mathematics. Courses 27; 29, 30; 55, 56.
  Div. B, Nat. and Phys. Science—Astronomy Courses 31; 54; 91, 92.

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* See page 79 for Courses in Physics required of students taking the Mathematics Course.

Fourth Year, Arts: For Session 1919-20.
Full Course*: Courses 37, 38; 39, 40; 57, 58; 71, 72; 73, 74; 76; 93; 96.
Major: Course 39, 40; and a selection from Courses 37, 38; 57, 58; 71, 72; 73, 74; 76; 93; 96.
Minor: A selection from Courses 37, 38; 39, 40; 57, 58; 71, 72; 73, 74; 76; 93; 96.
Div. A, Nat. and Phys. Science: Courses 39, 40; 57, 58.
Div. B, Nat. and Phys. Science—Mathematics: Courses 39, 40; 57, 58.
Div. B, Nat. and Phys. Science—Astronomy: Courses 93; 96; 97, 98.
Minor in Finance: Course 71, 72.
First Year, Home Economics: Courses 1; 4.
First Year, Science: Courses 1; 4; 5, 6.
Second Year, Science—Mathematics I: Courses 7; 10; 13; 16.
Mathematics II: Courses 7; 16.
Third Year, Science—Mathematics (for 1919-20): Courses 27; 29, 30(a); 55, 56.
Astronomy: Courses 54; 91, 92; 93; 96.
Fourth Year, Science—Mathematics: Courses 39, 40; 61, 62; balance to be outlined.
First Year, Architecture: Courses 1; 4; 5, 6; 7.
Second Year, Architecture: Courses 17; 52; and for 1919-20 Course 7 also.
First Year, Engineering: Courses 16; 17; 19; 52; 93; and for 1919-20 Course 7 also.
Second Year, Engineering—Civil: Courses 21; 31; 55, 56; 96.
Electrical and Mechanical: Courses 21; 24; 55, 56.
For Session 1919-20, the following Courses will be given:
Civil: Courses 29, 30(a); 31; 55, 56; 93.
Electrical and Mechanical: Courses 29, 30(a); 55, 56; 93; 24.
Third Year, Civil Engineering: For 1919-20: Courses 54; 93; 96.
After 1919-20: Course 54 only.
Third Year, Electrical and Mechanical Engineering: For 1919-20: Course 39.

DEPARTMENT OF PHYSICS

Frank Allen, M.A., Ph.D., F.R.S.C.	*Professor*
R. K. McClung, M.A., D.Sc., F.R.S.C.	*Assistant Professor*
C. F. Cameron, B.A., B.C.E.	*Assistant*

N.B.—For key to system of numbering courses, see page 4.

1, 2. General Physics†. An introductory lecture course, illustrated by experiments, covering, in the first term, Mechanics, Hydrostatics and Heat, and, in the second term, Magnetism, Electricity, Sound and Light. No text book is employed, but the ground is fairly well covered by Gage's Principles of Physics (Goodspeed). Four hours a week. *Professor Allen.*

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* See page 79 for Courses in Physics required of students taking the Mathematics Course.

† Students in Arts intending to take any of the divisions of the special Course in Natural and Physical Science or the Special Course in Mathematics are strongly urged to elect this course in their First Year.

3, 4. General Physics (Practical). A laboratory course to be taken by all students who take the lecture courses 1 and 2. Students perform a series of experiments and definite measurements to illustrate the theoretical principles studied in the lectures. One practical period of two hours per week. *Assistant Professor McClung, Mr. Cameron and Professor Allen.*

5, 6. Mechanics, Heat and Sound. A more advanced course in which special attention is given to the derivation of formulae and the solving of problems. Two hours per week. *Mr. Cameron.*

7, 8. Mechanics, Heat and Sound. This course is similar to Course 5, 6, but will be presented mainly from the experimental standpoint. Two hours per week. *Mr. Cameron.*

9, 10. Electricity, Magnetism and Light. This course is similar in character and method to Course 5, 6. *Professor Allen.*

11, 12. Mechanics, Heat and Sound. A course involving the main principles of Mechanics, Heat and Sound, with special attention to their practical applications and to the solving of problems. It is designed especially for Engineering students. Two hours per week. *Assistant Professor McClung.*

13, 14. Electricity, Magnetism and Light. A course similar in character and method to Course 11, 12. Two hours per week. *Assistant Professor McClung.*

15, 16. Mechanics, Heat and Sound. A laboratory course in the theory and methods of physical measurements. Students are to perform an extensive series of experiments, and the results of each experiment are to be presented in a suitable report. Whenever possible, graphical methods are to be used. It is highly desirable that students should have an elementary knowledge of Analytical Geometry and Calculus. One practical period of three hours per week for each student. *Assistant Professor McClung and Mr. Cameron.*

17, 18. Electricity, Magnetism and Light. A laboratory course similar in character and method to Course 15, 16. One practical period of three hours per week for each student. *Assistant Professor McClung and Mr. Cameron.*

19, 20. Electrical Measurements. This course comprises a more advanced study, both theoretical and practical, of electrical measurements and is especially suited to students in Electrical Engineering. It will involve the use of electrical standards, quantitative measurements of capacity of condensers, self and mutual induction, magnetic induction and hysteresis, potentiometer measurements, high and low resistance and photometry. *Assistant Professor McClung.*

Senior Matriculation for Medicine: Courses 1, 2, 3, 4.
First Year, Arts: Courses 1, 2; 3, 4.
Third Year, Arts: General: Courses 1, 2; 3, 4.
  Mathematics: Courses 5, 6; 15, 16.
  Natural and Physical Science, Divisions A and B: Courses 5, 6; 15, 16.
  Natural and Physical Science, Divisions C and D: Courses 7, 8; 15, 16.
Fourth Year, Arts: Mathematics: Courses 9, 10; 17, 18.
  Natural and Physical Science: Courses 9, 10; 17, 18.
First Year, Science: Courses 1, 2; 3, 4.
Second Year, Science: Courses 7, 8; 15, 16.
Third Year, Science: Courses 9, 10; 17, 18.
First Year, Engineering: Courses 11, 12; 15, 16.
Second Year, Engineering: Courses 13, 14; 17, 18.
Third Year, Engineering (Electrical): Courses 19, 20.
Second Year, Pharmacy: Courses 1, 2, 3, 4

TEXT BOOKS

Text Books: Gage's Principles of Physics (Goodspeed); A Text Book of Physics, Watson; The Tutorial Physics.

The laboratory and its equipment are available wherever possible to anyone desirous of engaging in original investigation in Physics.

DEPARTMENT OF BOTANY

A. H. Reginald Buller, B.Sc., Ph.D., D.Sc., F.R.S.C.................. *Professor*
———————————— .... *Lecturer*
C. W. Lowe, M.Sc. .... *Assistant*

N.B.—For key to system of numbering courses, see page 4.

1, 2. **General Botany.** An introductory lecture course covering, among other topics, the following: Classification of objects; comparison of living and non-living matter; the differences between animals and plants. The structure of the seed and contents of its cells; the seeds of the pea, bean, castor oil plant, and date palm; the grains of wheat and corn; the conditions for germination and the phenomena accompanying it; the exhaustion of the reserve food-stuffs. The seedling: Its structure, mode of development and relations with external conditions; the theory of irritability; geotropism, heliotropism and hydrotropism; the further development of shoot and root. The general morphology of the plant body, and the principal modifications of the stem, leaf and root; buds, grass-haulms, stolons, runners, rhizomes, corms, tubers, bulbs, spines and thorns, tendrils, cladodes, phyllodes, compound leaves, etc: the growing point of stems; the origin of new leaves and buds. The cell and the cell theory; protoplasm as the physical basis of life; protoplasmic movement; turgidity; the structure and division of the nucleus; the origin of new cells by cell division. The internal morphology of the stem of monocotyledons and of dicotyledons; the functions of vascular bundles; the cambium and the secondary thickening of stems and roots; the secondary protective tissues, cork and bark. The leaf as an organ for carrying on the process of photosynthesis: the epidermis, including hairs and stomata, vascular bundles, mesophyll, and intercellular spaces; photosynthesis (carbon assimilation); the nature and function of chlorophyll corpuscles and of chlorophyll; the evacuation of the products of photosynthesis and their ultimate fate. The root: its root-tip, root-hairs, and mode of branching; the growing point. Climbing plants; stem-climbers and tendril-climbers; the physiology of climbing; lateral geotropism; reactions to the stimulus of contact. The elementary facts in the nutrition of the plant; the nature and sources of the raw food materials; the necessary chemical elements and their mode of absorption; water cultures: the constitution of the soil; the transpiration current; transpiration; photosynthesis; the products of metabolism, together with their distribution, storage, and utilization; respiration contrasted with photosynthesis. Carnivorous plants; drosera, utricularia, sarracenia, dionaea and nepenthes. The classification of plants, including the main sub-divisions of the vegetable kingdom; the morphology and physiology of the following thallophyta: protococcus (pleurococcus), saccharomyces (yeast), bacteria, spirogyra, fucus, mucor, penicillium, psalliota campestris (mushroom). Alcoholic fermentation; bacteria as the cause of nitrogen fixation, of fermentative processes, of putrefaction, and of disease. The bryophyta, illustrated by a moss plant; the pteridophyta, illustrated by a fern plant; alternation of generations. Reproduction in the phanerogamia; the flower and its chief modifications in structural plan; the minute structure of the pollen grain and of the ovule; pollination and its agents; floral mechanisms as illustrated by the lady slipper, orchid, primula, salvia, etc. Fertilization of the ovule; development of seeds and fruits; the plum, strawberry, orange, cocoanut, etc.; dispersion of seeds and fruits; the nature of pine cones, both male and female. Two hours a week.

3, 4. **Laboratory Course in General Botany.** This course is designed to accompany Course 1, 2. One practical period of two hours per week

3a, 4a. **Laboratory Course in General Botany.** This course for students in Arts is designed to accompany courses 1, 2. One practical period of two hours fortnightly.

5, 6. **Morphology and Physiology of the Flowering Plant.** A lecture course of two hours per week.

7, 8. **Laboratory Course on Morphology and Physiology of the Flowering Plant.** One period of two hours per week.

9, 10. **Systematic Botany of the Cryptogamia and Phanerogamia.** A detailed treatment of the Thallophyta, Bryophyta, Pteridophyta and the facts of reproduction in the Phanerogamia. A lecture course of three hours per week.

11, 12. **Laboratory Course in Systematic Botany.** This course is designed to accompany Course 9, 10. Five hours per week.

14. **Evolution and Inheritance.** A broad treatment of the Doctrine of Evolution, Mendel's Laws of Inheritance, etc. One hour per week.

15, 16. **Special Courses.** Advanced lectures on Morphology, Physiology, Ecology, Palæobotany, Inheritance, etc. Four hours per week,

17, 18. **Laboratory Course for Advanced Botany.** This course is designed to accompany Courses 14, 15 and 16. Nine hours per week.

Senior Matriculation for Medicine:	Courses 1, 2; 3, 4
Second Year, Arts:	Courses 1, 2; 3a, 4a.
Third Year, Arts:	Courses 5, 6; 7, 8.
Fourth Year, Arts:	Courses 9, 10; 11, 12; 14
Second Year, Science:	Courses 1, 2, 7, 8.
Third Year, Science:	Courses 9, 10, 11, 12; 14
Fourth Year, Science:	Courses 15, 16; 17, 18.
Second Year, Pharmacy:	Courses 1, 2; 3, 4.

TEXT BOOKS

Sargent: Plants and their Uses, Bergen & Caldwell: Practical Botany, Strasburger: Text Book of Botany; Coulter, Barnes & Cowles: Text Book of Botany.

At the beginning of the session there will be several excursions to the prairie, woods and river side for the purpose of studying the algae, fungi, and flowering plants in relation to their environment. Students are recommended to acquaint themselves with the Canadian orders of flowering plants during the summer vacation. The most suitable flora is Gray's New Manual of Botany.

The laboratory of the Department will be open and encouragement will be given to any one desiring to carry on research on some botanical problem.

DEPARTMENT OF GEOLOGY AND MINERALOGY

Robert C. Wallace, M.A., Ph.D., D.Sc., F.G.S. ....*Professor*
Justin S. De Lury, B.A., M.A.I.M.E.......... ....*Assistant Professor*
Edward M. Burwash, M.A., Ph.D. .. .. .. *Assistant Professor ad interim*
Lucas G. Thompson, B. Sc................... ....*Fellow*

N.B.—For key to system of numbering courses, see page 4.

1, 2. **General Geology.** The more important minerals and rocks. Earth features and the forces that modify them. Structures seen in rocks. Rocks and the soil. Water supply. Ore deposits. Fossils and their meaning. Origin and age of the earth. Historical geology, in particular of Western Canada. Evolution of plant and animal life. Blackwelder and Barrows' Elements of Geology. Two hours a week.

3, 4. **Practical Demonstrations.** On minerals, rocks, and fossils, and in topographical and geological mapping. One hour a week.

5, 6. **Engineering Geology.** Similar in scope to course 1, 2, but with particular application to engineering problems, such as water supply, foundations, building stone, mining processes, and structural materials. Ries and Watson's Engineering Geology. Two hours a week.

7, 8. **Practical Geology.** Systematic examination of minerals by blowpipe and dry way tests. Identification of the commoner minerals and rocks. Mapping of geological sections. Identification of type fossils. Two hours a week.

9. **Elementary Mineralogy.** The crystalline and physical properties of minerals, in particular of the more soluble minerals. Methods of identification. Two hours a week.

11, 12. **Mineralogy and Crystallography.** Laws of crystallography. Stereographic projection. Systems and classes. Optical properties. Classification and systematic study of minerals. Genetic relationships. Rogers' Introduction to the Study of Minerals. Two hours a week.

13, 14. **Practical Mineralogy and Crystallography.** Crystal drawing. Identification of crystal forms. Goniometric investigation of single crystal. Study and identification of minerals. Two hours a week.

15, 16. **Petrology.** Optical properties of rock-forming minerals under polarising microscope. Classification of rocks. The characteristics of the various rock families. Magmatic differentiation. Physicochemical laws governing the formation of igneous, metamorphic, and sedimentary rocks. Harker's Petrology. Two hours a week.

17, 18. **Practical Petrology.** Identification of rock-forming minerals under the microscope. Study and identification of rocks in thin sections, and in hand specimens. Preparation of thin sections. Quantitative estimation of rocks. Five hours a week

19. **Economic and Mining Geology.** Nature and origin of ore deposits. Natural occurrence, methods of identification, and evaluation of the more important ores. Geological structure of chief ore-bearing regions in Canada. Mining processes. Three hours a week.

20. **Vertebrate and Invertebrate Palaeontology.** A study mainly of the invertebrates, and more especially of their hard parts. Classification, distribution, and geological range. Fossils of North America, and particularly of Western Canada. Woods' Palaeontology. Two hours a week.

22. **Practical Vertebrate and Invertebrate Palaeontology.** Preparation of material for study. Examination of collections of North American fossils. Three hours a week.

23, 24. **Advanced Economic Geology.** An exhaustive study of the genesis and mineralogy of ore deposits. The structural geology and petrography of the great mining districts of the world. Lindgren's Mineral Deposits. Two a hours week.

25, 26. Advanced Investigations and Research. Students in the M.A course, and the more advanced students in the fourth year of the B.Sc. course, will carry out, under direction, independent investigations on some field or laboratory problem. The laboratories are open all day for this purpose.

27, 28. Geological Excursions. During October, the earlier part of November, and the latter part of March, excursions will be conducted on Saturdays to places of geological interest in the neighborhood of Winnipeg. These excursions form an integral part of the class work.

29, 30. Extension Evening Courses. Courses are offered in all branches of Geology, Mineralogy, Ore-Deposits, etc. The nature of the courses, their duration, etc., are arranged by consultation with those interested. The courses are free, or nominal fees only are charged for a few courses.

31, 32. Assaying A course on the determination of the precious metals in ores by means of the fire assay, for those students who are able to take such a course in addition to their regular work. A knowledge of elementary chemistry is prerequisite, and some acquaintance with minerals and rocks is desirable. Three hours a week.

N.B.—Students who intend to take Geology as a final subject should, if possible, spend their summers as student assistants under the Geological Survey of Canada.

Second Year, Arts: Courses 1, 2; 3, 4.
Third Year, Arts: Natural and Physical Science, Div. A, C & E: Courses 1, 2 (if not already taken); 7, 8; 11, 12; 13, 14.
Fourth Year, Arts: General: Courses 1, 2; 3, 4.
Natural and Physical Science, Div. A, C & E: Courses 15, 16; 17, 18; 19 (optional).
Natural and Physical Science, Div. E. (additional): Courses 20 and 22, with modified Courses 17, 18.
Graduate, Arts: Courses 23, 24; 25, 26.
Second Year, Science: Courses 1, 2; 7, 8.
Third Year, Science: Courses 11, 12; 13, 14; 19; 20 and 22.
Fourth Year, Science: Courses 15, 16; 17, 18; 23, 24.
Third Year, Engineering: Civil Engineering: Courses 5, 6; 7, 8.
Second Year, Pharmacy: Course 9.

DEPARTMENT OF CHEMISTRY

Matthew A. Parker, B.Sc., F.I.C., F.R.S.C.	*Professor*
Henry P. Armes, B.Sc., Ph.D	*Assistant Professor*
————————	*Assistant Professor*
————————	*Demonstrator*

N.B.—For key to system of numbering courses, see page 1.

The following are among the lecture courses given. These are all illustrated by experiments.

1, 2. Elementary Inorganic Chemistry. Fundamental principles of chemistry; elements and compounds; laws of combination; atoms and molecules; acids, bases, salts; properties of some common elements and their more important compounds. The subject is treated in an elemen tary way. Textbook recommended, McPherson & Henderson's An Elementary Study of Chemistry (Ginn & Co.). Three hours per week lectures, and one hour tutorial, with laboratory work in addition.

3, 4. **Inorganic Chemistry.** Similar to course 1, 2, but more advanced, and deals with some of the more general subjects barely touched on in the more elementary course. Three hours per week, one hour tutorial, with laboratory work. Textbook recommended, Smith's General Chemistry for Colleges (Century Co.).

5, 6. **Medical Chemistry.** The subjects dealt with are selected with regard to their importance for medical students. About half of the course deals with inorganic and half with organic chemistry. Three hours per week lectures, with laboratory work. Textbooks, recommended, Smith's General Chemistry for Colleges (Century Co.) and Haskin's Organic Chemistry (Wiley).

7, 8. **Organic Chemistry.** An introduction to the study of organic chemistry. General principles; fatty compounds; some typical carbocyclic and a few heterocyclic compounds. Two hours per week lectures. Textbooks recommended, Perkin and Kipping's, or Holleman's Organic Chemistry.

9, 10. **Electro-Chemistry.** Theories and laws relating to practical applications of electro-chemical processes. One hour per week. Textbook recommended, M. de Kay Thompson's Applied Electro-Chemistry (Macmillan & Co.).

11, 12. **Physical Chemistry.** Introduction to Physical Chemistry. Two hours per week lectures. Textbook recommended, James Walker's Introduction to Physical Chemistry (Macmillan & Co.).

13, 14. **Advanced Organic Chemistry.** Subjects chosen with reference to literature available in the library. Two hours per week.

15, 16. **Advanced Inorganic Chemistry.** Chiefly descriptive inorganic chemistry; subjects chosen with reference to literature available in the library. Two hours per week.

17, 18. **Advanced Physical Chemistry.** A continuation of Course 11, 12. Two hours per week.

19, 20. **History of Chemistry.** A brief outline of the history of some of the more important discoveries and theories of chemistry. One hour per week throughout the session.

The following *laboratory* courses are offered.

21, 22. **Practical Chemistry I.** Experiments illustrating general principles and the preparation and properties of substances studied in course 1, 2. One period of three hours per week.

23, 24. **Practical Chemistry II.** Experiments illustrating general principles and the preparation and properties of substances studied in course 3, 4. Simple qualitative analysis. One period of three hours per week.

25, 26. **Practical Chemistry III.** Preparation of some substances not included in course 21, 22; quantitative experiments illustrating fundamental laws; qualitative analysis. Three periods of two hours per week.

27, 28. **Practical Chemistry IV.** Inorganic preparations; qualitative analysis; simple gravimetric and volumetric analysis; reactions of some organic substances; preparations. Two periods of three hours per week.

29, 30. **Practical Chemistry V.** Quantitative analysis leading up to methods of water analysis, coal analysis, etc., of interest to engineering students. One period of three hours per week.

31, 32. Practical Chemistry VI. Preparation of organic compounds; simple quantitative inorganic analysis. Two periods of three hours per week.

33, 34. Practical Chemistry VII. Qualitative inorganic analysis; quantitative analysis; preparation of organic compounds. Three periods of three hours per week.

35, 36. Practical Chemistry VIII. Physico-chemical measurements.

37, 38. Practical Chemistry IX. Methods of organic analysis; organic preparations.

39, 40. Practical Chemistry X. Methods of inorganic analysis; inorganic preparations.

Special students may be enrolled for the purpose of carrying on such advanced work as the equipment permits of, and special facilities will be given to those capable of engaging in research work.

Each student is supplied with such apparatus as may be required, with the exception of platinum wire and foil, laboratory towel, etc., which he must provide for himself.

A deposit of five dollars is paid to the Registrar at the beginning of each session, and all breakages will be made good out of this.

A record of all laboratory work must be kept in regulation report books. These are examined periodically during the session, and must be handed to the examiners in chemistry previous to the practical examination for the degree.

Attention is called to the regulation regarding practical work and reports on page 145.

Senior Matriculation: Courses 1, 2; 21, 22.
First Year, Arts: Courses 1, 2; 21, 22.
Second Year, Arts: Courses 1, 2; 21, 22.
Third Year, Arts: Courses 3, 4; 25, 26.
Fourth Year, Arts: Courses 7, 8; 11, 12; 33, 34.
First Year, Science: Courses 1, 2; 21, 22.
Second Year, Science: Courses 3, 4; 25, 26.
Third Year, Science: Courses 7, 8; 11, 12; 33, 34.
Fourth Year, Science: Courses 19, 20; two of 13, 14; 15, 16; 17, 18; and two of 35, 36; 37, 38; 39, 40.
First Year, Medicine: Courses 5, 6; 27, 28.
First Year, Pharmacy: Courses 1, 2; 23, 24.
Second Year, Pharmacy: Courses 5, 6; 27, 28.
First Year, Engineering: Courses 29, 30.
Fourth Year, Engineering (Electrical): Courses 9, 10.

DEPARTMENT OF PHYSIOLOGY AND BIOCHEMISTRY

Swale Vincent, M.D., D.Sc., M.R.C.S., L.R.C.P., F.R.S.E., F.R.S.C. .... *Professor*
A. T. Cameron, M.A., B.Sc. .... *Assistant Professor*
―――――――― *Assistant*

N.B.—For key to system of numbering courses, see page 1.

2. An Introduction to Physiology, Biochemistry and Pharmacology. The chief parts of the body; the skeleton (bones of the head, spine, thorax, pelvis, arm, and leg); outline of the muscular system; general plan of the nervous system; the organs of digestion, circulation and respiration; the microscopic structure of the body; physiology of muscle and nerve, digestion, circulation, respiration, excretion, general metabolism; the ductless glands, the nervous system, voice and speech, locomotion, the special senses (sight, hearing, taste, smell, and touch); the physiological action of drugs. Textbook, Huxley's Elementary Physiology, latest edition. Two lectures a week, Second term (Tuesdays and Thursdays, 11 a.m.).

4. **An Introduction to Experimental Physiology.** Anatomy of the frog; ciliary motion; chief apparatus employed in experimental physiology; muscular contraction; effect of curari; tetanus; fatigue; normal beat of frog's heart; nervous control of the heart; effect of nicotine and atropine on the heart. Textbook, Shäfer's Experimental Physiology (Longman's, 1912 Ed.). Two hours laboratory work per week, Second Term (Tuesdays, 9 to 11 a.m.).

9, 10. **Elementary Physiology.** Structure and functions of the cell, and of the simple tissues (general physiological methods; graphic records; the cell as an elementary organism, functions of nucleus and protoplasm; the vital phenomena of cells; manifestations of life; stimuli and irritability). General chemistry of the animal body. Physiology of muscle (contraction of muscle; gross change in form; microscopic change; simple twitch; effects of different conditions; isometric and isotonic contraction; work of muscle; muscle wave; summation of stimuli, tetanus; voluntary contraction; the muscle sound; physical and chemical properties of muscle; chemical and electrical changes of muscle during contraction). Physiology of nerve (transmission of the nerve impulse; rate of transmission; conductivity; electrotonus and Pfluger's law; electrical changes during contraction; negative variation). Digestion and absorption (the digestive enzymes; the tissues and mechanisms of digestion; properties of saliva, gastric juice, bile, pancreatic juice, and the succus entericus; the foodstuffs and the changes they undergo in digestion; nervous mechanism of secretion of the digestive juices; chemical mechanism of secretion; absorption by capillaries and by the villi; absorption in the large intestine; muscular mechanisms of digestion, mastication, deglutition, movements of intestine (peristaltic movements); vomiting; defæcation; the lacteals and the lymphatic system). The circulation of blood and lymph (structure and physical properties of the blood vessels; blood pressure; rate of flow of blood; action of the heart and its valves; the heart sounds; pressure in the heart cavities during a cardiac cycle; the cardiac impulse; cardiograms; the pulse; the cardiac rhythm throughout vertebrates; functions of the cardiac ganglia; innervation of the heart; the work of the heart; innervation of the blood vessels; the capillary circulation; inflammation; variations in the quantity of blood and lymph). Respiration (general mechanics of respiration; changes in the air during respiration; circumstances influencing chemical changes; respiratory changes in the blood; spectroscopic study of arterial and venous blood; derivatives of haemoglobin; respiratory changes in the lungs and tissues). Excretion (structure and functions of the kidneys; secretion of urine; nature of tubular and glomerular secretion; chemistry of the urine; nervous mechanism of micturition; structure and functions of the skin), etc. Textbooks: Stewart, Manual of Physiology (W. B. Saunders, Philadelphia); Howell, Textbook of Physiology (W. B. Saunders, Philadelphia); Starling, Human Physiology (J. & A. Churchill, London); Reference books: Schäfer, Textbook of Physiology, 2 vols. (Young J. Pentland, Edinburgh and London); Howell, An American Textbook of Physiology, 2 vols. (W. P. Saunders, Philadelphia); Monographs in Biochemistry (Longmans, London and New York); Vincent, Internal Secretion and the Ductless Glands (Arnold, London); Hutchinson, Applied Physiology (Arnold, London). Two lectures a week, both terms (Mondays and Wednesdays, 2 p.m.)

11, 12. Advanced Physiology. Metabolism of proteins, fats and carbohydrates, glycosuria, diabetes; starvation; source of muscular energy; animal heat; nutrition and diet; classification of foods. Internal secretion and the ductless glands (internal secretion as applied to glands which have also an external secretion; internal secretion of the adrenals, thyroids and parathyroids; pituitary body; functions of thymus, spleen, haemal glands). Structure and functions of the nervous system (nerve cells and nerve fibres); the neurone theory; chemistry of nervous tissues; structure and functions of the spinal cord, reflex actions; structure and functions of the medulla oblongata; nuclei of cranial nerves; structure and functions of the pons varolii and cerebellum; nuclei of the cranial nerves; structure and functions of the mesencephalon, thalamencephalon, the cerebral hemispheres, cerebral cortex, motor areas; attempts to locate higher psychical functions, association areas; the nature of mind; the sympathetic and related system of nerves; the automatic fibres; preganglionic and postganglionic fibres; the cranial and sacral autonomic fibres; the enteric nervous system). Special senses (the structure and functions of the eye, ear, and nose; modes of termination of sensory nerves; the skin and tactile sensation; sensations of heat, cold and pain). Voice and speech (anatomy and physiology of the larynx; the quality, pitch and loudness of the human voice; the different voice registers; vowel sounds). Physiology of reproduction. Textbooks: As for Course 9, 10. Students at the end of their second year in Physiology will be expected to show a competent knowledge of both year's work. Two lectures a week for both terms (Tuesdays and Fridays at 2 p.m.).

13. Elementary Practical Experimental Physiology. Simple experiments in muscle-nerve physiology, graphic records, effects of varying conditions on muscular contractions, transmission of nerve-impulse, electrotonus, Pfluger's law, the beat of the heart and its nervous control, perfusion through blood vessels, reflex action, etc. Textbook: Schäfer, Experimental Physiology, 1912 Ed. (Longman's, London and New York). Two three-hour periods per week during one term (Mondays and Wednesdays 3 to 6 p.m.

14. Advanced Practical Experimental Physiology. Some of the more difficult experiments of the elementary course repeated and studied in greater detail, electro-physiology (galvanometry), blood pressure, opthalmoscope, laryngoscope, experiments upon the special senses, physiological, psychological, etc. Textbook, Alcock & Ellison, Practical Physiology (Longman's, London and New York). Two three-hour periods per week during the Second Term (Tuesdays and Fridays, 3 to 6 p.m.).

16. Elementary Practical Biochemistry. Isolation and preparation of pure organic compounds; detection of elements, hydrocarbons, halogen derivatives of hydrocarbons, alcohols, esters, ethers, aldehydes and ketones, organic acids, fats, carbohydrates, proteins; action of enzymes; cyanogen compounds, amines, amino-acids, amides, purines, guanidine acids, aromatic acids, etc. Textbook: Aders Plimmer, Practical Physiological Chemistry (Longmans, London and New York). Two three-hour periods per week during one term (Mondays and Wednesdays, 3 to 6 p.m.).

17. Advanced Practical Biochemistry. Detection and estimation of carbohydrates, fats, and proteins; protein derivatives; food constituents; study of digestive processes; blood; normal and pathological urine with the quantitative estimation of its constituents. Textbook: Aders Plimmer, Practical Physiological Chemistry (Longmans, London, and New York). Two three-hour periods per week during the First Term (Tuesdays and Fridays, 3 to 6 p.m.).

19, 20. **Advanced Laboratory Courses** are given in connection with Major and Minor Courses in Experimental Physiology and in Physiological Chemistry for the M.A. degree, and in connection with the Fourth Year work for the B.Sc. degree. The laboratories are open daily from 9 a.m. to 11 p.m. for the prosecution of original research. Application is to be made to the Professor.

21, 22. **Practical Pharmacology.** An experimental course on the physiological action of drugs. One three-hour period per week (Thursdays).

The examination requirements for Third and Fourth Years of Arts will be similar to those of the Second and Third Years of Medicine respectively, except in so far that Arts students are required to pass an examination in practical histology.

Breakages. A deposit of $5.00 is paid to the Registrar at the beginning of each session, and all breakages will be made good from this. See page 156.

PHYSIOLOGICAL RESEARCH PRIZE

A fund has recently been raised among medical men and others interested in Physiology and will be devoted to providing annually, or at longer intervals, a prize for original investigation carried out in the Physiology Department. The following regulations govern the award of the prize:

(1) The prize shall be called "The Physiological Research Prize."

(2) The prize shall be awarded annually or biennially, or may be withheld at the discretion of the Committee (*vide infra*).

(3) The interest on the money invested shall be utilized to provide a medal and a money prize for the report on an original investigation which shall be deemed by the Committee to be of the greatest merit.

(4) The essay submitted must in each case contain an account of original investigation carried out wholly or in part in the Department of Physiology and Physiological Chemistry of the University of Manitoba.

(5) The subject of the investigation shall be some branch of Physiology or some allied medical or biological subject, and shall be approved by the Committee before the work is commenced.

(6) Work carried out in conjunction with another investigator or results published conjointly with another author may be submitted by a candidate for the prize. In such cases the Committee will take into consideration the part actually taken by the candidate in the work done. Further in such cases, the candidate must send in an account of the results obtained in the form of an essay, which must be his own unaided composition.

(7) Registered students of the University of Manitoba and members of the staff other than professors or lecturers shall be eligible to compete.

(8) Medical practitioners shall be eligible to compete on registration as students of the University.

(9) The duty of awarding the prize shall be delegated to a committee consisting of the Professor of Physiology and two others selected annually by the University Council.

(10) Essays must be in the hands of the Registrar before April 30th of each year.

Third Year, Arts:	Courses 9, 10; 13, 16.
Fourth Year, Arts:	Courses 11, 12; 17, 14.
Graduate, Arts:	Courses 19, 20.
Third Year, Science:	Courses 9, 10; 13, 16.
Fourth Year, Science:	Courses 11, 12; 17, 14; 19, 20.
Second Year, Medicine:	Courses 9, 10; 13, 16.
Third Year, Medicine:	Courses 11, 12; 17, 14; 21, 22.
Second Year, Pharmacy:	Courses 2, 4.

DEPARTMENT OF ZOOLOGY

Chas. H. O'Donoghue, D.Sc., F.Z.S. .... *Professor*
———————— .... *Lecturer*

N.B.—For key to system of numbering courses, see page 4.

1, 2. **Junior Course in Zoology.** A course of lectures dealing with the general principles of zoology; the outlines of the morphology and anatomy of a progressive series of animal types both vertebrate and invertebrate; the elements of animal physiology, cytology, histology and bionomics; the main phenomena of reproduction, development and life histories; an elementary treatment of evolution, heredity and variation. The first part of the course is designed also to meet the needs of students of Pharmacy and the second to suit the needs of students of Senior Matriculation for Medicine. Two hours per week.

3, 4. **Junior Course in Practical Zoology.** A course of laboratory work to accompany the foregoing, providing an introduction to zoological methods. Two hours per week.

5, 6. **Comparative Anatomy of the Chordata.** A general account of the structure and classification of the Chordata including the evolution of the main groups. Two hours per week.

7, 8. **Practical Course in the Comparative Anatomy of the Chordata.** A laboratory course accompanying the above and illustrating the salient features of the anatomy, osteology and histology of the Chordata. Six hours per week.

9, 10. **Comparative Anatomy of the Invertebrata.** A general account of the structure and classification of the Invertebrata including larval forms and the light they throw on the relationships of the various groups. Two hours per week. (Not given in 1918-1919.)

11, 12. **Practical Course in the Comparative Anatomy of the Invertebrata.** A laboratory course accompanying the above and illustrating the salient features of the gross morphology, anatomy and histology of the Invertebrata. Six hours per week. (Not given in 1918-1919.)

13. **History of Zoology.** A brief account of the history of zoology with reference to the principal workers in that branch of Science and the theories they have propounded. One hour per week.

14. **Parasitology.** The general characters of parasites, their relation to their hosts and an account of the life histories of the commoner parasites of man. One hour per week.

16. **Practical Course in Parasitology.** A practical course illustrating the above by means of the actual examination of a series of forms. Two hours per week.

17. **Embryology of the Vertebrata.** The outlines of the embryology of the higher Chordata studied in a series of selected types. One hour per week. (Not given in 1918-1919.)

19. **A Practical Course in the Embryology of the Vertebrata.** A laboratory course accompanying the above, providing an introduction to embryological techinique and an opportunity of studying series of preparations. Three hours per week. (Not given in 1918-1919.)

20. **Zoogeography.** The division of the land masses of the world into regions according to the animals they contain. The distribution of the main groups, and the animals characteristic of the various divisions. The factors encouraging and limiting dispersal; former land connections, continuous areas, barriers, human interference, etc. One hour per week. (Not given in 1918-1919.)

21, 22. **Advanced Studies.** Students in the Fourth Year of the Science Course will be given opportunities for further reading and practical work including the carrying out of independent investigations. Hours by arrangement.

Research. Encouragement will be given to anyone wishing to conduct research and such equipment as is present in the laboratories and library will be available.

Text Books. Marshall, The Frog; Marshall & Hurst, Practical Zoology; Thompson, Outlines of Zoology; Parker and Haswell, Textbook of Zoology, 2 vols.; Reese, An Introduction to Vertebrate Embryology; Prentiss, A Laboratory Manual and Textbook of Embryology.

Books of Reference. Needham, General Biology; Parker, Elementary Biology; Bailey and Colemen, Biology; Hertwig, Zoology (Trans. by Kingsley); Kinglsey, Vertebrate Zoology; Wiedersheim, Comparative Anatomy; Baker, Anatomical Terminology; Gadow, Classification of Vertebrates; Korschelt and Heider, Embryology; Keibel and Mall, Human Embryology; Minot, Embryology.

Senior Matriculation for Medicine: Courses 2, 4.
First Year, Pharmacy: Courses 1, 3.
Second Year, Arts: Courses 1, 2; 3, 4.
Second Year, Science: Courses 1, 2; 3, 4.
Third Year, Arts: Courses 5, 6, 7, 8.
Third Year, Science: Courses 5, 6, 7, 8, 13, 14, 16.
Fourth Year, Arts: Courses 5, 6, 7, 8.
Fourth Year, Science: Courses 5, 6, 7, 8, 13, 14, 16.
First Year, Medicine: Courses 5, 6, 7, 8.

CURRICULA IN ENGINEERING

The University of Manitoba confers five degrees in Engineering, viz., Bachelor of Civil Engineering (B.C.E.), Master of Civil Engineering (M.C.E.), Bachelor of Electrical Engineering (B.E.E.), Master of Electrical Engineering (M.E.E.), and Bachelor of Mechanical Engineering (B.M.E.). The following are the requisites for proceeding in course to admission to these degrees:

I. BACHELOR OF CIVIL ENGINEERING

MATRICULATION

Students may be admitted to the Engineering Courses as:

(1) Undergraduates.
(2) Conditioned Students.
(3) Partial Students.

Undergraduate Students are those who are taking the full course leading to a degree and who have satisfied the requirements for matriculation.

The requirements for matriculation for Engineering are set forth in pages 35 and 36.

Conditioned Students are subject to the same rules as govern conditioned students in Arts. See page 143.

Partial Students are those who do not belong to either of the above classes, but who, with the approval of the Professor concerned, are taking one or more of the special subjects of the Engineering courses, such students being allowed to attend any class without previous examination, provided they satisfy the professor of their ability to proceed with the class.

Only fully matriculated or undergraduate students and conditioned students who have met the requirements of the University regarding the removal of their conditions before the commencement of the Second Year, may proceed with the course for a degree.

UNDERGRADUATE COURSE IN CIVIL ENGINEERING

General Plan of Course

After having matriculated, the student of Civil Engineering is required to obtain credit for attendance at lectures and for laboratory, field and office work, as outlined below, and to pass four examinations, before being admitted to the degree of Bachelor of Civil Engineering, viz., the First, the Second, the Third, and the Fourth Year examinations.

Object of the Course

The course in Civil Engineering is designed to give a broad education in those general and scientific subjects which are the foundation of all branches of engineering, and a special training in those subjects especially related to Civil Engineering, enabling the student to take a position in any of the special branches, such as:

(1) Railroad Engineering.
(2) Land Surveying.†
(3) Railway and Geodetic Surveying.

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† The course has been specially arranged so that students who intend to take out licenses as Land Surveyors, may select subjects from the Civil Engineering Course which bear directly uoon the examination for Land Surveyors.

(4) Hydraulic Engineering (including the development of hydraulic power, etc.)

(5) Land Irrigation.

(6) Municipal Engineering (including design and construction of roads and pavements, water supply systems, sewerage systems).

(7) Sanitary Engineering.

(8) Bridge and Structural Engineering.

As the Civil Engineer frequently has to deal with problems involving electrical and mechanical work, the course also provides instruction in the principles of Steam and Mechanical Engineering, as well as in the principles of Electrical Engineering.

With this groundwork the student has a wide field from which to choose his life work, and the course especially fits him for the management and direction of business and engineering enterprises after he has received the necessary practical experience.

Method of Instruction

Instruction is given by lectures, recitations and class-room work, together with actual practice in field and laboratory and in drawing work.

Examinations

In order to pass in any examination of the Civil Engineering Course (beyond matriculation), candidates are required to make a standing of 50 per cent. on each subject. The practical work in the field, laboratory, drafting room and class-room during the session is counted.

Outline of Courses

Reference Course No.	Page		Fall Term		Spring Term	
		FIRST YEAR	Lec.	Pract.	Lec.	Pract.
17	74	Analytical Geometry	3			
7, 52	73-5	Solid Geometry and Mensuration	2		2	
10, 19	73-4	Algebra	3		3	
16	74	Calculus			4	
93	77	Descriptive Astronomy	2			
29, 30	85	Chemistry		3		3
11,12;15,16	79	Physics	2	3	2	3
5, 6	97	Descriptive Geometry	2		2	
7, 8	97	Drawing		6		6
1, 2; 3, 4	101	Surveying	2	6	2	6
		SECOND YEAR				
29, 30a	74	Calculus	4		2	
31	75	Spherical Trigonometry	2			
13,14;17,18	79	Physics	2	3	2	3
5,6;7,8	101	Surveying	2	6	2	6
7, 8	98	Materials of Engineering	2		2	
1, 2	104	Kinematics and Mechanics of Machines	1		3	
55-6	75	Analytical and Applied Mechanics			4	
10	98	Cement Testing				3
9,10;11,12	97	Drawing and Descriptive Geometry	1	3	1	3
96	93-96	Astronomy	2		2	
1, 2	100	Graphical Statics	2	3		
		THIRD YEAR				
1,2;3,4	99	Railroad Surveying	2	3	2	3
4	100	Reinforced Concrete			3	
1,2;3,4	98	Hydraulics	2	2	2	2
1,2;3,4	98	Strength of Materials	2	3	3	3
11	99	Material Testing		3		
3, 4	104	Mechanical Engineering	2		1	3
93; 96	77	Astronomy	2		2	
54	75	Theory of Errors, etc.			1	
5, 6; 7, 8	82	Geology	2	2	2	2

Reference Course No.	Page	FOURTH YEAR	Fall Term Lec.	Fall Term Pract.	Spring Term Lec.	Spring Term Pract.
7, 8	100	Framed Structures	3		3	
9, 10	100	Framed Structures		6		6
15, 16	100	Retaining Walls and Foundations	2		2	
17, 18	101	Retaining Walls and Foundations		2		2
1, 2	99	Water Supply	2		2	
6	99	Sewage Disposal			2	
11	99	Highway Construction	2			
5	99	Railway Economics	2			
10	101	Geodesy			2	
5	98	Water Power Development	2			
15, 16	103	Elements of Electrical Engineering	2	3	2	3
21, 22	101	Inspection and Reports		4		4
		One of:				
4	99	Water Supply				3
8	99	Sewage Disposal				3
5	100	Reinforced Concrete Design		3		
13	99	Highway Construction		3		
24	101	Framed Structures				3
26	101	Retaining Walls and Foundations				3
12	99	Tests on Building Materials				3
7	98	Water Power Development		3		
		Graduation Thesis				

Summer Theses

Students of the First, Second and Third Years are required to prepare during the Summer following each of these years a thesis describing in detail some piece of engineering work or structure, or describing any work with which they have been connected during the vacation.

These theses must be typewritten on letter size paper bound in stiff covers and submitted to the Secretary of the Standing Committee on Engineering on or before November 30th.

Graduation Theses

Every student of the Fourth Year is required to prepare a design, with adequate drawings, of some engineering work or enterprise, or to complete an original research on some material of construction.

The subjects of these theses are to be submitted for approval to the professor of Civil Engineering not later than January 15th, and the completed reports must be handed in on or before April 15th of the final year.

II. MASTER OF CIVIL ENGINEERING

Candidates for the degree of Master of Civil Engineering (M.C.E.) must have been admitted to the degree of Bachelor of Civil Engineering at least two years previously, must have spent the interval in the active practice of the profession, and must present theses (with plans), satisfactory to the examiners, upon some engineering work with which they have been connected.

III. BACHELOR OF ELECTRICAL ENGINEERING

MATRICULATION

The requirements for matriculation for Engineering are set forth on pages 35-36.

UNDERGRADUATE COURSE IN ELECTRICAL ENGINEERING

General Plan of Course

After having matriculated, the student of Electrical Engineering is required to obtain credit for attendance at lectures and for field, office and laboratory work, as outlined below, and to pass four examinations, before being admitted to the degree of Bachelor of Electrical Engineering, viz., the First, the Second, the Third and the Fourth Year examinations.

Object of the Course

The course in Electrical Engineering is intended to give a student, first, a preliminary training in the various sciences, such as Physics, Chemistry and Mathematics, which must form the basis of any engineering education; secondly, instruction in the general engineering subjects, such as Surveying, Mechanical Drawing, Strength of Materials, and Hydraulics; and thirdly, an intimate knowledge of the subjects required to qualify a man for the special work of an Electrical Engineer, namely, the flow of continuous and alternating currents, the design and operation of continuous and alternating current machinery, electric railways, electric lighting and power distribution, mechanical engineering, hydraulic machinery and machine design.

In general, the course is intended to give a student a working knowledge of the principles of Civil and Mechanical Engineering, and a more specialized training in Electrical Engineering, which, when combined with experience in practical work, will qualify him to perform the duties of an engineer in charge of the design, operation or management of electrical plants, railways or other industries.

Method of Instruction

Instruction is given by lectures, recitations and class-room work, and by actual practice in field, drafting room and laboratory.

Examinations

In order to pass in any examination of the Electrical Engineering Course (beyond Matriculation), candidates are required to make a standing of 50 per cent. on each subject. The practical work in the field, drafting-room, class-room and laboratories during the session is counted.

OUTLINE OF COURSE

First and Second Years

The First and Second Year courses are the same as those required of students of the First and Second Years in Civil Engineering, except that in the Second Year, Differential Equations, 2 hours a week in the Second Term, replaces Spherical Trigonometry, 2 hours a week in the First Term and Mathematical Astronomy, 2 hours a week in the Second Term. See page 92.

Third Year

Course No.	Page	SUBJECT	Lecture Hours per Week 1st Term	Lecture Hours per Week 2nd Term	Lab. Hours per Week 1st Term	Lab. Hours per Week 2nd Term
1, 2	102	Continuous Currents and C.C. Machinery	2	2		
11, 12	103	Continuous Current Laboratory			4	4
5, 6	102	Machine Design	1	1	3	3
3, 4	104	Thermodynamics and Power Plants	2	1		3
19, 20	79	Electrical Measurements			3	3
1, 2; 3, 4	98	Strength of Materials	2	3	3	3
1, 2	100	Graphical Statics	2	3		
1, 2; 3, 4	98	Hydraulics	2	2	2	2
11	99	Material Testing			3	
39 or 24	75	Differential Equations	2	2		

A series of visits to electrical power plants and industries where electricity is used, will be made under the guidance of the professor of Electrical Engineering, in order that the student may become familiar with the methods of using electricity in actual commercial practice.

In the summer vacation each student will be required to prepare a complete set of drawings of some electrical power plant, or to write a thesis on an electrical or other engineering subject.

Students are strongly recommended to spend their holidays at electrical or mechanical engineering work of some kind, and the value of such work will be recognized in the final estimate of the student's qualifications for the degree.

Fourth Year

Course No.	Page	SUBJECT	Lecture Hours per Week 1st Term	Lecture Hours per Week 2nd Term	Lab. Hours per Week 1st Term	Lab. Hours per Week 2nd Term
3, 4	102	Alternating Currents and A.C. Machinery	3	3		
13, 14	103	Alternating Current Laboratory			9	9
5, 6	102	Electrical Machine Design	1	1	3	3
7	102	Electric Lighting and Power Distribution	3			
8	103	Electric Traction		3		
10	103	High Tension Transmission		1		
7, 8	104	Power Plant Design	2	2	3	3
9, 10	84	Electro-Chemistry	1	1		
5	98	Water Power Development	2			
		Thesis				

During the latter part of the second term the time allowed for laboratory work will be devoted to some original investigation, the results of which will be presented as a thesis at the end of the session.

IV. MASTER OF ELECTRICAL ENGINEERING

Candidates for the degree of Master of Electrical Engineering (M.E.E.) must have been admitted to the degree of Bachelor of Electrical Engineering at least two years previously, must have spent the interval in the active practice of the profession, and must present theses (with plans), satisfactory to the examiners, upon some engineering work with which they have been connected.

V. BACHELOR OF MECHANICAL ENGINEERING

MATRICULATION

The requirements for Matriculation are set forth in detail on pages 35, 36,

UNDERGRADUATE COURSE IN MECHANICAL ENGINEERING

General Plan of Course

After having matriculated, the student of Mechanical Engineering is required to obtain credit for attendance at lectures and for laboratory, field and office work, as outlined below, and to pass four examinations, before being admitted to the degree of Bachelor of Mechanical Engineering, viz., the First, the Second, the Third and the Fourth Year examinations.

Object of the Course

The object of the course in Mechanical Engineering is to give a broad general education in the basic principles underlying engineering knowledge and their application to modern engineering problems, preparing the student to take a position in any of the following special branches:

1. Power Plant Operation.
2. Railway Mechanical Engineering.
3. Heating and Ventilating Engineering.
4. Efficiency Engineering.
5. Designing.
6. Executive Positions in Manufacturing Plants.

Instruction is also provided in certain Civil and Electrical Engineering branches so as to provide a working knowledge of these subjects necessary to the successful practice of Mechanical Engineering.

Method of Instruction

Instruction is given by lectures, recitations and classroom work, together with actual practice in field and laboratory and in drawing work.

Examinations

In order to pass in any examination of the Mechanical Engineering Course (beyond Matriculation), candidates are required to make a standing of 50 per cent. on each subject. The practical work in the field, laboratory, drafting room and class-room during the session is counted.

OUTLINE OF COURSE

First and Second Years

The First and Second Year courses are the same as those required of students in Electrical Engineering (see page 94), except that in the Second Year, Shop Work (courses 20 and 21, page 104) may be substituted for Surveying.

Third Year*

Course No.	Page	SUBJECT	Lecture Hours per Week 1st Term	Lecture Hours per Week 2nd Term	Lab. Hours per Week 1st Term	Lab. Hours per Week 2nd Term
9, 10	104	Thermodynamics and Power Plants	5	5		
5, 6	104	Machine Design	1	1	6	6
39 or 24	75	Differential Equations	2	2		
1, 2; 3, 4	98	Hydraulics	2	2	2	2
1, 2; 3, 4	98	Strength of Materials	2	3	3	3
11	99	Material Testing			3	
1, 2	100	Graphical Statics	3	3		
18	104	Mechanical Engineering Laboratory				3

Fourth Year*

7, 8	101	Power Plant Design	2	2	3	3
11, 12	104	Heating and Ventilating	1	1	3	3
13, 14	104	Railway Mechanical Engineering	2	1		3
15, 16	104	Industrial Economics	1	1		
7, 8; 9, 10	100	Roof, Truss and Bridge Design	3		6	
15, 16	103	Elements of Electrical Engineering	2	2	3	3
9, 10	84	Electro-Chemistry	1	1		
104	33	Mechanical Engineering Laboratory			3	
		Thesis		5		

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* The work of the Third and Fourth Years will not be offered during 1919-1920.

Courses in Engineering in Detail

DEPARTMENT OF CIVIL ENGINEERING

————————	*Professor*
Leslie I. Johnstone, B.S., A.M. Amer. Soc. C.E.	*Assistant Professor*
R. W. Moffatt, B.A.Sc., A.M.En.Inst.Can	*Assistant Professor*

N.B.—For key to system of numbering courses, see page 1.

I. DRAWING AND STEREOTOMY

1, 2. **Descriptive Geometry.** Use of instruments; geometrical problems; elementary principles of orthographic, oblique and axonometric projections; the application of such principles to the solution of problems relating to straight lines and planes; intersections and developments; lettering;. Lectures, one hour per week, both terms. *Assistant Professor Moffatt.*

3, 4. **Drawing.** Construction of geometrical problems; plans, elevations and sections of solids; simple structural details and machine parts; bolts, screws, keys and rivets; sketches and working drawings of machine parts; lettering; shades and shadows. shade lines and line shading. Practical work, six hours per week, both terms. *Assistant Professor Moffatt.*

5, 6. **Descriptive Geometry.** Problems in orthographic projectons; problems relating to straight lines and planes; determination of shades and shadows; sections of solids; intersections of surfaces; transition pieces; developments of surfaces; perspective. Lectures, two hours per week, both terms. *Assistant Professor Moffatt.*

7, 8. **Drawing.** Line and color shading; measurement and complete drawings of machine parts; rivetted joints, steel columns, journals and bearings, shafts and couplings; problems in descriptive geometry; intersections and developments of surfaces; perspectives. Practical work, six hours per week, both terms. *Assistant Professor Moffatt.*

9, 10. **Descriptive Geometry.** Generation and classification of lines and surfaces; conic sections; gearing curves; cams; tangencies; intersections and developments of curved surfaces; advanced problems in descriptive geometry; graphical determination of spherical triangles; perspective; spherical projections and the construction of maps. Lectures, one hour per week, both terms. *Assistant Professor Moffatt.*

11, 12. **Drawing.** Advanced problems in descriptive geometry; perspective; shades and shadows; spherical projections and map drawing; intersections and developments of curved surfaces; sketches and working drawings of machine parts and structural details. Practical work, three hours per week, both terms. *Assistant Professor Moffatt.*

14. **Stereotomy.** Description of building stones; description of tools and their uses; squaring surfaces; batters, quoins, voussoir and keystones; arches for windows and doors; rampart arches; oblique arches; flat, segmental and irregular arches; semi-dome and barrel vaults; annular and raking vaults, etc. Lectures, one hour per week, second term. *Assistant Professor Moffatt.*

16. **Stereotomy.** Problems in stone cutting, including plans for buttress walls, arches and vaults; isometric drawings and linear perspective of quoins, voussoir and keystones, etc. Practical work, two hours per week, second term. *Assistant Professor Moffatt.*

II. HYDRAULIC ENGINEERING

1, 2. **Hydraulics.** Pressure of water on plane and curved surfaces; centre of pressure; Bernouilli's Theorem; investigation of flow through orifices, mouthpieces, weirs, pipes, and channels; velocity and discharge measuring devices; dynamic action of jets and streams; water wheels and turbines. Lectures, two hours per week, both terms. *Assistant Professor Johnstone.*

3, 4. **Hydraulic Laboratory.** Discharge measurements and determination of co-efficients for orifices, mouthpieces, weirs and pipes; tests on water meters, Venturi meters, pitometers; efficiency tests of pumps, water wheels, and turbines. Laboratory, two hours per week, both terms. *Assistant Professor Johnstone.*

5. **Water Power Development.** Reconnaissance of water power; study of structures and equipment; selection of water wheels and turbines; speed gates and governors. Lectures, two hours per week, first term.

7. **Water Power Development.** Stream gauging; turbine testing; designs and estimates of different features for a certain development. Laboratory and design, three hours per week, first term.

III. MATERIALS OF ENGINEERING

1, 2. **Strength of Materials.** Strength and elastic properties of structural materials under different conditions of loading and support; relation between stress and deformation; shearing forces and bending moments in simple, fixed and continuous beams; stresses and deflections in beams. and girders; investigation of theory for design of columns, shafts, springs, thick and thin cylinders, and flat plates. Lectures, two hours per week, first term; three hours per week, second term. *Assistant Professor Moffatt.*

3, 4. **Structural Materials—Computations and Design.** Calculation of shears and bending moments; stresses and deflections in beams and girders under various conditions of loading and support; calculation of safe loads for columns and struts; bending and shearing stresses in solid and hollow circular shafts; stresses in hollow cylinders, such as steam boilers; efficiency of rivetted joints and splices in girders, trusses, steam boilers, stand pipes, and similar constructions. Design of beams, girders, columns, and struts. Design of solid and hollow shafts for power transmission; design of hollow cylinders, stand pipes, water towers, etc. Class work, three hours per week, both terms. *Assistant Professor Moffatt.*

5, 6. **Strength of Materials.** Strength and elastic properties of structural materials under different conditions; relation between stress and deformation; shearing forces; bending moments; stresses and deflections in simple, fixed and continuous beams and girders; investigation of theory of design for columns and struts; use of handbooks, tables and charts; riveting, testing of structural materials. Lectures and laboratory, three hours per week, both terms for students in architecture. *Assistant Professor Moffatt.*

7, 8. **Materials of Engineering.** Characteristics and uses of cement, concrete, brick, stone, wood; methods of proportioning concrete; methods of manufacture of Portland cement and building brick; brickwork and masonry construction. Description of the different kinds of iron and steel, with special reference to their physical properties; strength of materials; stress and strain; modulus of elasticity; strength of beams. Lectures, two hours per week, both terms. *Assistant Professor Johnstone.*

10. **Cement Testing.** Standard tests of different brands of cement, determining fineness, specific gravity, tensile strength, normal consistency,

time of setting, and soundness; tests of transverse, compressive, and torsional strength; determination of the effect of heat, salt, alkalies, and freezing upon cement. Laboratory work, three hours per week, second term. *Assistant Professor Johnstone and Assistant Professor Moffatt.*

11. **Material Testing.** Tensile tests of iron and steel bars, wire, and cable; compression tests of iron and steel, timber, brick, stone, concrete, and tile; shearing tests of wood and steel; transverse tests of timber, iron, steel, and concrete beams; torsional tests of rods and springs; load strain diagrams; calculation of stresses, elongation, deflection, ductility, etc.; moduli of elasticity, rupture, resistance, and rigidity. Laboratory work, three hours per week, first term. *Assistant Professor Johnstone and Assistant Professor Moffatt.*

12. **Tests on Building Materials.** To be outlined. Laboratory work, three hours per week, second term.

IV. MUNICIPAL AND SANITARY ENGINEERING

1, 2. **Water Supply—Theory.** Quantity of water required and sources of supply; causes affecting yield and run-off. Quality of water required; examination of supplies with relation of water supply to disease. Works for collection, storage, purification, and distribution of supplies. Lectures, two hours per week, both terms.

4. **Water Supply—Design.** Designs for purification plants, distribution systems, collection of water and reservoirs. For special students or graduation theses. Class work, three hours per week, second term.

6. **Sewage Disposal and Purification.** Elements of Sanitary Engineering; sewerage systems; modern methods of sewage purification. Lectures, two hours per week, second term.

8. **Sewage Disposal and Purification.—Design.** Designing of parts of sewerage systems and purification plants. Class work, three hours per week, second term.

9. **Plumbing and Sanitation.** Plumbing and drainage of buildings; city plumbing by-laws; methods of sewage disposal and purification for private plants. Lectures, one hour per week, first term.

11. **Highway Construction.** Location, drainage, and surfacing materials for country roads; materials and methods of construction for city pavements. Lectures, two hours per week, first term.

13. **Highway Construction.** Tests of road materials; surveys and estimates for highway construction. Laboratory and office, three hours per week, first term.

V. RAILWAY ENGINEERING

1, 2. **Railway Location and Construction.** Preliminary and location surveys for railroads; geometry of simple and compound curves; turnouts; Y tracks and crossings; the railroad spiral; earthwork; the mass diagram. Lectures, two hours per week, both terms. *Assistant Professor Johnstone.*

3, 4. **Railway Location and Construction.** Practice in running curves and setting slope stakes, measurement and computation of quantities; construction of maps and profiles. Field and office, three hours per week, both terms. *Assistant Professor Johnstone.*

5. **Railway Economics.** Organization and financing of railway companies; effect of grade, curvature and distance on the operating expenses,

relation of operating expenses to gross revenue and fixed charges; relation of probable traffic to population; costs of betterment of existing lines in relation to saving in operating expenses and increase in gross revenue. Lectures, two hours per week, first term. *Assistant Professor Johnstone.*

VI. STRUCTURAL ENGINEERING

1, 2. **Graphical Statics.** Graphical methods for resolution and composition of concurrent, and non-concurrent forces; principles of the force and equilibrium polygons. Graphic determination of moments; centres of gravity; moments of inertia. Graphic determination of reactions, sheers, moments and deflections for beams and girders. Use of influence lines for shears and moments in girders. Lectures, two hours and practical three hours per week, first term. *Assistant Professor Moffatt.*

4. **Reinforced Concrete—Theory.** General theory for calculation of stresses in reinforced concrete beams (rectangular and T sections), slabs, and columns. Safe and ultimate loads for reinforced beams, slabs and columns. Construction and use of diagrams and tables. Interpretation of specifications for reinforced concrete. Lectures, three hours per week, second term. *Assistant Professor Johnstone.*

5. **Reinforced Concrete—Design.** Designs for reinforced concrete buildings, girders, culverts and arches. Lectures and class work, three hours per week, first term.

7, 8. **Framed Structures.** Loads, stresses, and sections for wooden and steel roof trusses, highway bridges, railroad bridges, trestles and viaumns. Interpretation of and use of specifications. Determination of maximun and minimum stresses in plate girders, members of Howe, Pratt, Warren, Curved Chord, Baltimore and Petit trusses, due to uniform and wheel loads. Theory of stresses in portal bracing, bents with knee braces, towers, swing and vertical lift bridges. Lectures, three hours per week, both terms.

9, 10. **Framed Structures—Design.** Calculations and designs for wooden and steel roof trusses, deck and through plates girder bridges, railway or highway bridges with Howe, Pratt or Warren truss, bridges having curved top chord for trusses, railway trestles. Class work, six hours per week, both terms.

11, 12. **Building Construction.** Foundations for buildings; loads in buildings; building by-laws; calculation of joists, beams, lintels, and columns in buildings; steelwork for structural steel buildings; loads, stresses and sections for wooden and steel roof trusses. Lectures, two hours per week, both terms.

13, 14. **Building Construction—Design.** Design of: Foundations and footings; wooden and steel roof trusses; steel buildings. Class work, three hours per week, both terms.

15, 16. **Retaining Walls, Foundations and Dams.** Investigation of principles of earth pressure, developed from theory of compound stress; application to thrust of earth against a wall; principles and design of retaining walls; bearing power of soils; piles and pile driving; timber and reinforced concrete piles; footings; grillages; underpinning; foundations under water; open dredging; coffer dam, freezing and pneumatic caisson processes. Principles and design of high masonry dams. Description of existing typical walls, foundations and dams. Lectures, two hours per week, both terms. *Assistant Professor Moffatt.*

17, 18. **Retaining Walls, Foundations and Dams.—Design.** Typical designs of retaining walls, foundation footings and high masonry dams, a worked out in class and drafting rooms. Class work, two hours per week, both terms. *Assistant Professor Moffatt.*

19, 20. **Specifications.** A study of building specifications with respect to durability, strength and cost of materials, methods of construction, local conditions, city building by-laws. Class work, two hours per week, both terms, for students of architecture.

21, 22. **Inspection and Reports.** Inspection of reports on various existing structures, manufacturing plants and municipal works in Winnipeg and vicinity. Field and office, four hours per week, both terms.

24. **Framed Structures.** Complete designs for: Railway, trestle, swing, lift, and cantilever bridges. For special students or graduation theses. Class work, three hours per week, second term.

26. **Retaining Walls, Foundations and Dams.** To be outlined. Class work, three hours per week, second term. *Assistant Professor Moffatt.*

VII. SURVEYING AND GEODESY

1, 2. **Surveying.** Observation for meridian and latitude; problems in levelling; topographical surveying; earthwork computations; straightening curved boundary; computation of areas; measurement of lines; measurement of angles; measurement of direction; measurement of differences of elevation; care and adjustment of instruments; open and closed traverses; surveying problems. Lectures, two hours per week, both terms. *Assistant Professor Johnstone.*

3, 4. **Surveying.** Use of surveying instruments; simple problems with transit and tape; differential levelling; computations; construction of maps, profiles, etc.; profile levelling; cross-sectioning; transit and tape traverses. Field and office, six hours per week, both terms. *Assistant Professor Johnstone.*

5, 6. **Surveying.** City surveying; curves; staking out buildings, street railway tracks, etc.; mining surveying; triangulation; topographic surveying; hydrographic surveying; plane table work. Lectures, two hours per week, both terms. *Assistant Professor Johnstone.*

7, 8. **Surveying.** Topographic survey, field work and mapping; use of stadia, sextant and plane table; short stadia and plane table surveys; three-point problem; two-point problem. Field and office, six hours per week, both terms. *Assistant Professor Johnstone.*

10. **Geodesy.** Purposes of a geodetic survey; principles of triangulation; base-line measurement; measurement of angles; triangle adjustments and computations; computations of geodetic positions; geodetic levelling; astronomical determinations; map projections; adjustment of observations by method of least squares. Lectures, two hours per week, second term. *Assistant Professor Johnstone.*

12. **Geodesy.** Determination of constants and errors in surveying instruments; level testing, standardization, etc. *Assistant Professor Johnstone.*

Senior Matriculation: Courses I., 1, 2, 3, 4.
First Year, Engineering: Courses I., 5, 6, 7, 8; VII., 1, 2, 3, 4.
Second Year, Engineering: Courses I., 9, 10, 11, 12; III., 7, 8, 10; VI., 1, 2; VII., 5, 6, 7, 8.
Third Year, Civil Engineering: Courses II., 1, 2, 3, 4; III., 1, 2, 3, 4, 11; V., 1, 2, 3, 4; VI., 4.
Fourth Year, Civil Engineering: Courses II., 5, 7; III., 12; IV., 1, 2, 4, 6, 8, 11, 13; V., 5; VI., 5, 7, 8, 9, 10, 15, 16, 17, 18, 21 22, 24, 26; VII., 10.
Third Year, Electrical Engineering: Courses II., 1, 2, 3, 4; III., 1, 2, 3, 4, 11; VI., 1, 2.
Fourth Year, Electrical Engineering: Course II., 5.
Third Year, Mechanical Engineering: Courses II., 1, 2, 3, 4; III., 1, 2, 3, 4, 11; VI., 1, 2.
Fourth Year, Mechanical Engineering: Courses VI., 7, 8, 9, 10.
First Year, Architecture: Courses I., 5, 6.
Second Year, Architecture: Courses I., 9, 10, 14, 16; III., 7, 8.
Third Year, Architecture: Courses III., 5, 6; IV., 9; VI., 1, 2, 19, 20.
Fourth Year, Architecture: Courses VI., 11, 12, 13, 14.

DEPARTMENT OF ELECTRICAL ENGINEERING

Edward P. Fetherstonhaugh, M.C., B.Sc., A.M. Can. Soc. C.E., Assoc. A.I.E.E. .... *Professor*
John W. Dorsey, E.E. .... *Assistant Professor*

For key to system of numbering courses, see page 4.

1, 2. **Continuous Currents and Continuous Current Machinery.** A course of lectures on the flow of continuous currents in circuits of various kinds, the laws of magnetism, the electrical and magnetic properties of materials, and the construction, theory and characteristics of continuous current machinery. Textbooks: Christie's Electrical Engineering, and The Standard Handbook for Electrical Engineers. Two lectures per week. *Assistant Professor Dorsey.*

3, 4. **Alternating Currents and Alternating Current Machinery.** A course of lectures involving a study of the laws governing the flow of alternating currents in circuits containing resistance, reactance and elastance, separately and combined, and a study of the operating characteristics of alternating current generators, motors, transformers, meters, regulating devices, etc. Textbook: Christie's Electrical Engineering. Three lectures per week. *Assistant Professor Dorsey.*

5, 6. **Electrical Machine Design.** Details and assembly drawings of, and full calculations involved in the design of direct and alternating current apparatus, such as motors, transformer, generators, etc. One lecture and three hours per week in draughting-room. Textbook: Gray, Electrical Machine Design. *Professor Fetherstonhaugh.*

7. **Electric Lighting and Power Distribution.** In this course of lectures the general headings are generation, distribution and utilization. The economic and engineering problems of the power plant are first taken up, then the questions relating to the distribution system, and finally the various consuming devices are discussed. Such sub-headings as the following are included:—Prime movers, generators, switchboards, location and design of power stations and sub-stations, power plant economics, voltage regulation, problems in overhead and underground construction,

transformers and their connections, protective devices, interior and exterior illumination, photometry, characteristics of incandescent and arc lamps, economical section of feeders, and rates for electrical energy. In connection with this course, each student is required to prepare complete plans, specifications and an estimate of capital cost and operating expenses for a municipal or industrial plant. Textbooks: Electrical Central Station Distribution Systems, by Gear and Williams; Light, Photometry and Illumination, by Barrows; and The Standard Handbook for Electrical Engineers. Three lectures per week, first term. *Professor Fetherstonhaugh.*

8. **Electric Traction.** This course deals with the engineering questions and calculations involved in the design, construction and operation of electric railways. It includes engineering preliminaries; types of motors, and their characteristics; speed and power curves, and methods of control; and the design of the generating plant, and the overhead and track construction. Three lectures per week, second term. Textbook: Sheldon and Hausmann, Electric Traction and Transmission. *Professor Fetherstonhaugh.*

10. **High Tension Transmission.** Mathematical investigations of the problems involved in the design and operation of high tension lines, the selection of voltage and frequency, calculations of regulation under different conditions of load, lightning protection, etc. One lecture per week, second term. No textbook. *Professor Fetherstonhaugh.*

11, 12. **Continuous Current Laboratory.** To supplement the lecture course on Continuous Currents and Continuous Current Machinery, there will be a course of practical work in the laboratory, in which students will be trained in the use of electrical machines of different types, and the various methods of testing electrical machinery to determine the uses to which they may be put and their limitations. Two laboratory periods per week of two hours each. Textbook: C. Smith, Testing Dynamos and Motors. *Assistant Professor Dorsey.*

13, 14. **Alternating Current Laboratory.** A course of experimental work with alternating current motors, single phase and polyphase, generators transformers, meters of various types, the oscillograph, and other alternating current apparatus. The student in this course will be instructed to investigate the characteristics of circuits, instruments and machines, and will be trained to use his own initiative as far as is possible in determining the methods to be pursued. Three laboratory periods per week of three hours each. Textbook: C. Smith, Alternating Current Testing. *Assistant Professor Dorsey.*

15, 16. **Elements of Electrical Engineering.** A general treatment of the elementary principles involved in problems relating to the generation, transmission and utilization of electrical power and an accompanying course of laboratory instruction, consisting of tests and experiments with continuous and alternating current machinery, designed to verify the laws of electricity and magnetism and to familiarize the student to some extent with the characteristics and limitations of the various types of machines to be met with in practice. Lectures, two hours per week. Textbook: Timbie, Elements of Electricity. Laboratory, one period per week. Textbook: C. Smith, Testing Dynamos and Motors. *Professor Fetherstonhaugh.*

Third Year, Electrical Engineering: Courses 1, 2; 5, 6; 11, 12
Fourth Year, Electrical Engineering: Courses 3, 4; 7; 8; 10; 13, 14
Fourth Year, Civil Engineering: Courses 15, 16.
Fourth Year, Mechanical Engineering: Courses 15, 16.

DEPARTMENT OF MECHANICAL ENGINEERING

Only Courses 1 and 2 are offered during 1919-1920.

For key to system of numbering courses, see page 4.

1. **Kinematics of Machinery.** Elements of mechanism, relative motion, virtual centres, velocity and acceleration of machine parts, classification of simple mechanisms, design of wheel teeth, belt gearing and cams. One lecture and three hours drawing per week.

2. **Mechanics of Machinery.** Application of principles of mechanism to the determination of forces acting in machine links; frictional resistances and efficiency of machines including sliding, journal, rolling, gear and belt friction. One lecture and three hours drawing per week.

3, 4. **Thermodynamics and Power Plants.** A course of lectures on power plants covering thermodynamics, properties of gases and of steam, performance, testing and mechanics of the steam engine, valve gears, fuels and combustion, steam boilers, steam turbines, condensers, feed water heaters and auxiliaries, gas engines, gas producing and general considerations involved in the design and economical operation of power plants and the selection of equipment. First term, two lectures per week; second term, one lecture and three hours laboratory per week.

5, 6. **Machine Design.** Application of the theory obtained in other courses to designing of machine parts. Starts with designing and drawing of simple machine parts and gradually leads up to the designing and complete working drawings of an entire machine. One lecture and six hours drawing per week.

7, 8. **Power Plant Design.** The purpose of this course is to give the fundamentals of good power plant design in general and in detail. During the second term a complete power plant will be designed and general drawings made. Two lectures and three hours drawing per week.

9, 10. **Thermodynamics and Power Plants.** Covers the same ground as Course 3 more in detail and more thoroughly. Five lectures per week.

11, 12. **Heating and Ventilating.** Various systems of heating and ventilating; data and information; and, finally, design of heating and ventilating systems for dwellings and large buildings. One lecture and three hours drawing per week.

13, 14. **Railway Mechanical Engineering.** Various types of locomotives and cars and apparatus used on same. Design of locomotives and freight cars. First term, two lectures per week; second term, one lecture and three hours drawing per week.

15, 16. **Industrial Economics.** Factory organization and management, cost keeping systems, efficiency engineering, labor problems, etc. One lecture per week.

18. **Mechanical Engineering Laboratory.** Testing of various types of heat engines and writing reports for same. Three hours laboratory per week.

19. **Mechanical Engineering Laboratory.** Continuation of Course 12. Three hours laboratory per week.

20, 21. **Shop Work.** Practical work in woodworking, patternmaking, machine shop and forge shop work. Two lectures and six hours practical work per week.

Second Year, Civil, Electrical, and Mechanical:	Courses 1, 2.
Third Year, Civil:	Courses 3, 4.
Third Year, Electrical:	Courses 3, 4; 5, 6.
Third Year, Mechanical:	Courses 5, 6; 9, 10; 18.
Fourth Year, Electrical:	Courses 7, 8.
Fourth Year, Mechanical:	Courses 7, 8; 11, 12; 13, 14; 15, 16; 19

CURRICULUM IN ARCHITECTURE

The University of Manitoba confers one degree in Architecture viz: Bachelor of Architecture (B. Arch.) The following are the requisites for proceeding to the same.

BACHELOR OF ARCHITECTURE

The University offers a full professional course of instruction, leading to the degree of Bachelor of Architecture, and covering a period of four years. It aims to provide its graduates in Architecture with the general training necessary for the demands of the best professional practice. To that end the scheme of study combines complete technical instruction with the essentials of a liberal education.

Architecture is essentially a fine art. While it rests on statics and the properties of materials, as a physical basis, it differs from engineering in the degree in which construction is invested with the spiritual quality of beauty. Its successful practice demands the possession of a broad general culture, a liberal training in architectural precedent and forms and in original design, and a thorough knowledge of the principles underlying sound construction. More important than the imparting of any specific knowledge, however, is the necessity of training the mind to reason and to think logically and clearly; of stimulating the imagination; of educating the aesthetic sense; and of imparting facility in the expression of ideas through the usual mediums.

The architect being first of all a designer, the study of design is made central, an increasing proportion of time from year to year being devoted to it and to its preparatory and accessory subjects, the comprehensive courses in history of architecture and ornament opening the door to the world's wealth of architectural traditions and forms, thus seen in their development and true relation to the times and peoples, and supplying the varied elements of design, to be fused and recombined by the trained imagination and cast in new forms of beauty for the solution of new problems.

Draftsmanship, as the medium of expression and an important means of evocation of ideas, receives constant attention throughout the course, in the form of drawing as such, and as employed in design and other graphical work.

A knowledge of scientific construction is an essential part of the architect's equipment. Courses in mathematics, applied mechanics, the properties of building materials, lead to the study of the theory and practice of structural design, and train the student to control intelligently the structural problems of modern architecture.

Provincial License to Practise

Graduates are exempt from the examinations of the Manitoba Association of Architects and are eligible for the license to practise in this Province after completing two years service in an architect's office, following graduation, the Council of the Association being satisfied of the adequacy of such practical experience.

OUTLINE OF COURSE

Entrance Requirements

The requirements for matriculation for Architecture are the same as those for Arts and Science, for which see pages 00 to 00. Beginning with the session 1917-1918 an additional course in Elementary Drawing will be required.

First Year

Course No.	Page	SUBJECT	Lecture Hours per Week 1st Term	Lecture Hours per Week 2nd Term	Lab. Hours per Week 1st Term	Lab. Hours per Week 2nd Term
	107	Free-hand Drawing			2	2
1, 2	107	Elements of Architecture	1	1	2	2
5, 6	107	Shades and Shadows	1	1	3	3
1	73	Algebra	4			
5, 6	73	Plane Trigonometry	2	2		
5, 6	97	Descriptive Geometry	2	2		
4	73	Analytical Geometry		4		
7	73	Solid Geometry	2			
1, 2	78	Elementary Physics	4	4		
1, 2	83	General Inorganic Chemistry	4	4		
1, 2	51	English Composition and Rhetoric	2	2		
5, 6	56	*French Reading and Literature	3	3		

*German or Italian for French-speaking students.

Second Year

	107	Freehand Drawing			3	3
11	107	Elements of Architecture			3	
15, 16	107	†History of Architecture, Renaissance and Mod.	2	2		
19, 20	107	Architectural Design			5	5
7, 8	98	Materials of Construction	2	2		
11, 12	79	Physics—Mechanics; Heat; Sound	2	2		
21, 22	107	Perspective	1	1	2	2
7, 52	73-5	Solid Geometry and Mensuration	2	2		
9, 10	97	Descriptive Geometry	1	1		
17	71	Analytical Geometry	3			
14, 16	97	Stereotomy		1		2
7, 8	52	English Literature	2	2		

Third Year

	107	Freehand Drawing			3	3
15, 16	107	†History of Architecture, Renaisance and Mod	2	2		
33, 34	107	Theory of Architecture	2	2		
35, 36	108	History of Ornament; Decoration	2	2	3	3
39, 40	107	Architectural Design			12	12
	108	History of Art	1	1		
1, 2	100	Graphic Statics	2	3		
5, 6	98	Properties and Strength of Materials	3	3		
19, 20	101	Specifications	2	2		
9	99	Plumbing and Sanitation	1			
		Electrical Engineering and Illumination		1		3

Fourth Year

	107	Freehand Drawing			3	3
59, 60	107	Architectural Design, Thesis			12	12
	108	History of Art			1	1
11, 12	104	Heating and Ventilation	1			
11,12;13,14	100	Building Construction	2	3	3	3
4	100	Reinforced Concrete Construction		3		2
		Professional Practice	1			

† 15, 16, Ancient and Mediaeval History, alternates with 17, 18, Renaissance and Modern, the Second and Third Year classes being combined for the purpose. 15, 16, will be given in 1919-20.

DEPARTMENT OF ARCHITECTURE

Arthur Alexander Stoughton, Ph.B. (Col.), M.R.A.I.C., M.Soc. Beaux Arts Archts...*Professor of Architecture*

N.B.—For key to system of numbering courses, see page 4.

Drawing. Familiarity with drawing, necessary to the adequate expression of ideas and the proper presentation of architectural compositions, is secured by constant drill in free-hand and instrumental work, in the various media (pencil, pen, brush work, charcoal), in special exercises and incidental to all the subjects involving practical architectural work. Free-hand drawing in one or another form or medium is carried throughout the course.

1, 2. **Elements of Architecture, I.** The classic orders; their forms, details, development and history. Ware's Vignola, Part I. Lecture, one hour; drawing work, two hours a week.

11. **Elements of Architecture, II.** Fundamental features of structures; walls, openings, supports, columns, lintels, arches, vaults, ceilings, roofs, domes, stairs, and their artistic treatment, in the common forms in use in architectural composition. Ware's Vignola, Part II. Drawing work, three hours a week.

5, 6. **Shades and Shadows, I.** Method of accurate determination of the shades and shadows of all the common forms occurring in Architecture, with the general principles involved. McGoodwin's Shades and Shadows. Lecture, one hour; drawing work, three hours a week.

21, 22. **Perspective, II.** The principles of angular and parallel perspective, with practical application to various architectural problems. Lecture, one hour; drawing work, two hours a week.

15, 16; 17, 18. **History of Architecture, II, III.** Architectural forms and their development in relation to the civilization of different peoples and times, and to structural considerations; architectural treatment of structure in all times. This course is designed to lay a broad foundation of information and precedent, on which to base the work in design, to stimulate the mind, foster research, and cultivate taste and the critical faculty. Two parts, (1) Ancient and Mediaeval, (2) Renaissance and Modern. Course 15, 16, Ancient and Mediaeval, will be given in 1919-20. Lectures, research work, designs in given styles. Lecture, two hours a week. Hamlin, History of Architecture; Fletcher, History of Architecture.

19, 20; 39, 40; 59, 60. **Architectural Design, II, III, IV.** As soon as the student has become familiar with the simple architectural forms and features and the methods of their representation, he is set to combining these elements in compositions increasing in size and complexity;—plans, elevations and interior design and decoration; culminating in the complete working out of a large composition, as a thesis. The practical study of design is effected by the development of problems from given programmes, with criticism and suggestion during the process, recourse being had to plates, photographs and other documents for aid and inspiration. One day problems are worked out on certain Saturdays. Second Year, five hours; Third and Fourth Years, twelve hours a week.

33, 34. **Theory of Architecture, III.** Discussion of various considerations involving the philosophy of art and architecture and the principles governing design; the place of architecture among the fine arts and its relation to building and construction; theories of proportion and principles of planning and composition; the influence of materials on design; conventionalization; the historic styles; scale, style, expression, character. Lecture, two hours a week.

35, 36. **History of Ornament and Decoration.** A course on the elements of ornament and decorative form and their development in all the ages, as applied to architecture and interior decoration; the use of sculpture, painting, furniture; with the study of color and of the arts and crafts allied to architecture. Lectures, research, sketches, problems in design. Owen Jones, Grammar of Ornament; Speltz, Ornament.

Construction. Theoretical. The mathematical subjects of algebra, plane and solid geometry, trigonometry, analytical geometry, calculus, mechanics, and graphic statics, form the groundwork for and are followed by the technical courses in engineering calculations and structural design, on the one hand, and the graphical subjects of shades and shadows, perspective and stereotomy, on the other. Practical—The nature, properties and strength of the building materials. Details of construction in wood, iron and steel, and masonry; specifications; office practice; sanitation and plumbing; heating and ventilation; electrical engineering, etc.

History of Art. A course open to all students, and to the public, on the development of art through the ages. It will give a comprehensive view of sculpture, architecture, painting and minor arts from the earliest times to the present. Its object is two-fold—(*a*) to introduce the student to the wide and rich field of the fine arts, and (*b*) to co-ordinate the elements of history, literature, art and culture in the civilization of each period. It will be descriptive and critical in character and will be fully illustrated by slides and prints collected for the purpose. One hour a week.

Summer Work. The student must engage in certain work, prearranged with the head of the department, such as office practice in an office or on a building operation, sketching, reading, research or shop work, and make a definite and satisfactory presentation of the results not later than the opening week of the Fall term.

CURRICULA IN MEDICINE

The University of Manitoba confers two degrees in Medicine, viz., Doctor of Medicine (M.D.) and Master of Surgery (C.M.) The following are the requisites for proceeding in course to admission to these degrees:

I. DOCTOR OF MEDICINE

MATRICULATION

The requirements for Matriculation for Medicine are set forth in detail on pages 33-34.

UNDERGRADUATE COURSE IN MEDICINE

After having matriculated, the student of Medicine is required to pass five examinations before being admitted to the degree of Doctor of Medicine, viz., the First, the Second, the Third, the Fourth and the Fifth Year examinations.

Attention is called to the fact that it has been provisionally approved that, beginning with the academic year 1921-1922, the session will be lengthened to approximately thirty-six weeks.

Before presenting himself for each of these examinations, the candidate shall produce sufficiently certified tickets, from some University, College or School, recognized by the University of Manitoba, for the courses of lectures specified hereinafter; or, he shall have taken to the satisfaction of the Professor concerned the courses of lectures, demonstrations, laboratory practice, etc., of the University of Manitoba in those subjects in which the University has undertaken to provide instruction, and shall provide sufficiently certified tickets from some university, college or school, recognized by the University of Manitoba, for the remaining courses of lectures specified hereinafter. The Manitoba Medical College, in affiliation with the University of Manitoba, provides instruction and facilities for laboratory and clinical practice in all subjects not undertaken by the University.

By *sufficiently certified* tickets, it is meant that each ticket shall have entered upon it the number of lectures delivered on the subject and the exact number of lectures attended by the student, and that each ticket shall be signed by the professor, and further that the student presenting the ticket shall have actually attended three-fourths of the whole number of lectures delivered on the subject. Such tickets must be lodged with the Registrar by the candidate, at least ten days before the beginning of the examination for which he intends presenting himself.

Each lecture (unless otherwise stated) shall be of one hour's duration, and, as far as practicable, not more than one lecture on each subject shall be delivered on each separate day.

First Year

Course No.	Page	SUBJECT	Lecture Hours per week	Demonstration Hours per week	Laboratory Hours per week
5, 6; 7, 8	89	Zoology	2		6
5, 6, 27, 28	84-85	Chemistry	3		6
	117	Anatomy		2	13
7, 8	115	Histology		1	3

Examinations are given in December on Theoretical Zoology I and Theoretical Chemistry I; in April on Theoretical Zoology II, Practical Zoology, Theoretical Chemistry II, Practical Chemistry, Theoretical Anatomy, Practical Anatomy, Theoretical Histology and Practical Histology.

Second Year

Course No.	Page	SUBJECT	Lecture Hours per week	Demonstration Hours per week	Laboratory Hours per week
	117	Anatomy		3	13
	117	Embryology and Morphology	1		
	117	Medical Jurisprudence	1		
1, 2	115	General Pathology	1		4
9, 10; 13, 16	86-87	Physiology	2		6

Examinations are given in April on Theoretical Anatomy (including Embryology and Morphology), Practical Anatomy; Medical Jurisprudence, Theoretical Pathology, Practical Pathology, Theoretical Physiology and Practical Physiology.

Third Year

Course No.	Page	SUBJECT	Lecture Hours per week	Demonstration Hours per week	Laboratory Hours per week
11, 12; 17, 14	87	Physiology	2		6
3, 4	115	Special Pathology		2	4
1, 2	115	Bacteriology		1	3
21, 22	88	Pharmacology		3	
	117	Therapeutics	2		
	117	Materia Medica and Pharmacy	1		
	117	Clinical Anatomy		2	
	115	Physical Diagnosis (Medical)		3	
	116	Splints and Bandages (Surgical)		3	

Examinations are given in April on Theoretical Physiology, Practical Physiology, Theoretical Pathology, Practical Pathology, Theoretical Bacteriology, Practical Bacteriology, Practical Pharmacology, Therapeutics, Materia Medica and Pharmacy, and Clinical Anatomy. Sessional examinations will be given by the Medical College Faculty in Physical Diagnosis and the Surgical Application of Splints and Bandages, and the student must present a certificate of having passed these examinations before being admitted to the University examinations.

Fourth Year

Page	SUBJECT	Lecture Hours per week	Demonstration Hours per week	Laboratory Hours per week
117	Hygiene	1		
115	Medicine I	3		
116	Surgery I	3		
115	Clinical Medicine I		3	
116	Clinical Surgery I		3	
115	Clinical Pathology			
116	Obstetrics I	2		
116	Gynaecology	2		
116	Pediatrics	1		
	Anaesthetics			

Examinations are given in April on Sanitary Science, Theoretical Medicine, Theoretical Surgery, Clinical Medicine, Clinical Surgery (including Anaesthetics), Clinical Pathology, Obstetrics and Pediatrics and Gynaecology.

Fifth Year

Page	SUBJECT	Lecture Hours per week	Demonstration Hours per week	Laboratory Hours per week
115	Medicine II	3		
116	Surgery II	3		
116	Clinical Medicine II		3	
116	Clinical Surgery II		3	
116	Obstetrics II.	1		
116	Clinical Obstetrics			
116	Clinical Gynaecology		3	
117	Ophthalmology, Otology and Laryngology	1	3	
116	Operative Surgery		1	
116	Orthopedic Surgery		2	

Examinations are given in April on Theoretical Medicine (including Medicine I of the Fourth Year), Theoretical Surgery (including Surgery I of the Fourth Year), Obstetrics (including Obstetrics of the Fourth Year), Clinical Medicine, Clinical Surgery (including Orthopedic Surgery), Operative Surgery and Clinical Ophthalmology, Otology and Laryngology.

Each candidate for Fifth Year examination shall also furnish documentary evidence of attendance for twenty-four months at some incorporated General Hospital, and also of eight months' practice in a Lying-in Hospital, or of having had equivalent obstetrical advantages, with a certificate of attendance upon at least eight cases of labor. He must furnish certificates of having attended six autopsies, with the notes thereon. He must also present twelve satisfactory reports of cases, six in Medicine and six in Surgery, from observations actually made by himself in a hospital having not less than fifty beds for public ward patients. These reports must be certified as valid by the chief medical officer of the hospital in which they are made, and must, on completion, be handed to the Medical and the Surgical Registrar, respectively, of the Winnipeg General Hospital.

The tickets (except the General Hospital ticket) for examination must all be for attendance subsequent to the date when the candidate presenting them has gone up for his Third Year examination, and must extend over two full winter sessions of seven months each.

Four Year Course for Graduates in Arts

When a student is a graduate in Arts of the University of Manitoba or of any University in His Majesty's Dominions or elsewhere, recognized by the University of Manitoba, he may complete his medical course in four winter sessions of seven months each, provided that in the Third and Fourth Years of his University of Manitoba course in Arts he has taken one of the divisions of the course in Natural and Physical Science, including at least the subjects of Physics, Chemistry and Zoology, or has taken an equivalent course of similar content elsewhere. Such student shall not be required to produce a ticket for Physics, Zoology, Practical Zoology, Chemistry, Practical Chemistry, Physiology or Practical Physiology, or to pass an examination in Physics, Zoology, Practical Zoology, Chemistry, Practical Chemistry, Physiology or Practical Physiology, provided he can satisfy the Board of Studies that he has already taken at least fifty per cent. in such subjects in his course in Arts in the University of Manitoba, or equivalent standing in the University in which his Arts course was taken.

The tickets of such student in Medicine, Surgery, Obstetrics and Pediatrics, Gynaecology, Clinical Medicine, Clinical Surgery, Bacteriology, Ophthalmology and Otology, Operative Surgery and Orthopedic Surgery, must all be for attendance subsequent to the end of his second full winter session spent in the study of Medicine.

A graduate in Arts will take the remaining examinations of the First, Second and Third Years in Medicine required of him in two groups, one at end of his First Year on the course in Medicine and the other at the end of his second. The first group must contain at least First Year Anatomy and also Second Year Physiology (if still to be taken).

Admission Ad Eundem Statum

A student of Medicine in another University may be admitted *ad eundem statum* in the course in Medicine in the University of Manitoba.

In the case of any student from another university applying for admission *ad eundem statum* in the University of Manitoba, it shall be at the option of the Board of Studies to admit such student, even although his tickets may conflict with the foregoing regulations, but no student from another university can be admitted to the Fifth Year Examination unless he has attended one full seven months' winter session, taking out all the Fifth Year tickets of a Medical School in the Province of Manitoba affiliated with the University.

Examinations in Medicine

There is provided one paper for Pass and Honors in each subject, and the total value of each paper is one hundred marks. Fifty per cent. of the marks in each subject is required to satisfy the examiners.

The examinations are written examinations, except in clinical and practical subjects.

To obtain Honors in each subject, or in the whole examination, of any year, a candidate must obtain 67 per cent. of the marks given in each subject, or of the total marks given for the examination of the year.

Supplemental examinations in each year in Medicine will be allowed to those students who fail in not more than two subjects.

Such supplemental examinations or conditions *must* be removed as follows:

(*a*) Supplemental examinations of the First Year must be removed before the commencement of the Third Year.

(*b*) Supplemental examinations of the Second Year must be removed before the commencement of the Fourth Year.

(*c*) Supplemental examinations of the Third Year must be removed before the commencement of the Fifth Year.

For more detailed information as to supplemental examinations, see pages 22 and 33.

All degrees in Medicine are conferred by the Council of the University—at its regular meetings or at meetings specially called for that purpose.

Text-Books in Medicine

Anatomy—
Cunningham's Manual of Practical Anatomy.
Cunningham's Text-book, 4th edition, edited by Robertson.
Gray's Anatomy (English edition).
Jamieson's Companion and Manuals of Practical Anatomy.

Anaesthetics—Hewitt, Luke, Boyle.

Clinical Anatomy—
Treves and Keith's Surgical Applied Anatomy.
McLachlan's Applied Anatomy.
Taylor's Applied Anatomy.

Bacteriology—McFarland, Connell, Jordan, Muir and Ritchie, Park, Hiss

Chemistry—
R. H. Aders Plimmer, Practical Physiological Chemistry (Longmans London and New York).
Haskin's Organic Chemistry for Medical Students (2nd Edition) (Wiley, New York).

Clinical Medicine—
Wilson's Medical Diagnosis.
Musser's Medical Diagnosis.
Todd's Clinical Diagnosis.
Webster's Diagnostic Methods.

Clinical Surgery—Pearce Gould, Choyce, Eisendrath, Da Costa, Spencer and Gask.

Dermatology—Walker, Morris.

Diseases of Children—Holt, Still,. Kerley, Garrod-Batten, Thursfield.

Gynaecology—Dudley, Crossen, Penrose, Ashton, Kelly's Medical.

Histology—Stohr, Piersol, Schafer.

Hygiene—Egbert, Parkes, Rosenau, Harrington.

Laryngology—Coakley, Ballenger.

Materia Medica and Pharmacy—Bruce, Cushney, Schlief, Sollman.

Medical Jurisprudence—Reese, Glaister.

Medicine—Osler, Edwards, Boriard.

Mental Diseases—Clouston.

Nervous Diseases—Huns.

Obstetrics—Williams, Wright, Jellett, Hirst, Tweedy and Wrench, De Lee

Ophthalmology—Fuchs, May, Parsons.

Orthopedic Surgery—Taylor, Bradford and Lovett, Whitman.

Otology—Bacon, Ballenger.

Pathology—Stengel, Delafield and Prudden, Faught's Laboratory Diagnosis, Adami and McRae.

Physiology—
Schäfer, Text-book of Physiology, 2 vols.
Schäfer's Experimental Physiology (1913 edition).
Alcock and Ellison, Practical Physiology.
Starling, Stewart, Howell, Haliburton.

Practical Pharmacology—Edmunds and Cushny, Dixon, Sollman, Woods

Surgery—Rose and Carless, International Text-book, Stewart, Foote's Minor Surgery, Keen's System of Surgery, Kelly and Noble, Bennie's Operative Surgery, Burghard's Operative Surgery, Brewer.

Therapeutics—Sollmann, Brunton, Bruce's Principles of Treatment, Forchheimer.

Zoology—Marshall's The Frog, Parker's Zootomy, Beddard's Elementary Practical Zoology.

Dictionaries—Gould, Appleton, Dorland, Lippincott.

Fees

Registration and tuition fees are payable to the Bursar of Manitoba Medical College. For information as to these the student or prospective student is referred to the calendar of that institution. Examination and degree fees are payable to the Registrar of the University. For the amount of these, see pages 155-156.

*II. MASTER OF SURGERY

Candidates for the degree of Master of Surgery (C.M.) must have been admitted already to the degree of Doctor of Medicine of the University of Manitoba, or must, at the same examination at which they become candidates for the C.M. degree, be awarded standing on the final examination of the course for the degree of Doctor of Medicine.

The examination for the C.M. degree consists of:

1. A clinical examination on Operative Surgery.
2. The writing under supervision of a Thesis on some assigned subject in Surgery.

The successful candidate must obtain 75 per cent. of the total marks in this examination.

For the fee in connection with this examination see page 156.

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* New regulations regarding the granting of the C.M. degree have been provisionally approved, and notice is now given that the present requirements will continue in force for the examinations of 1920 and 1921, but that after that date the new requirements will come into force.

Courses in Medicine in Detail

DEPARTMENT OF BACTERIOLOGY

Gordon Bell, B.A., M.D., C.M. .... *Professor*

N.B.—For key to system of numbering courses, see page 4.

1, 2. Bacteriology. This course is devoted to the preparation of culture media, staining and identification of bacteria, culture methods, animal inoculation and vaccine therapy immunity.

DEPARTMENT OF PATHOLOGY AND HISTOLOGY

William Boyd, M.D., M.R.C.P. (Edin.) .... *Professor*

N.B.—For key to system of numbering courses, see page 4.

1, 2. General Pathology. This is an introductory course dealing with fundamental pathological processes and structural alterations; inflammation, regeneration, degeneration, infilteration, neoplasms, etc. One lecture and four hours laboratory work a week.

3, 4. Special or Systemic Pathology. This is a more advanced course dealing with special pathological conditions of different organs and tissues. Two demonstrations and four hours laboratory work per week.

6. Clinical Pathology. This is a course of ten lectures and ten practical demonstrations on applied pathology. Methods of examining the blood, the urine, the sputum, the stomach contents, the cerebro spinal fluid, etc., are taken up and each student is required to carry out a certain amount of practical work in the Pathological Laboratory of the Winnipeg General Hospital.

7, 8. Histology. A study of the structure of the tissues of the body, with instruction in the manipulation of the miscroscope, the preparation of tissues and full laboratory technique. Each student is required to prepare, stain and mount a full set of specimens for himself. One lecture and two hours laboratory work per week.

For courses in Chemistry, Zoology and Physiology offered to Medical Students, see under the respective Departments in the Arts and Science section.

Courses in Medicine in Detail

(Offered by the Faculty of Manitoba Medical College)

DEPARTMENT OF MEDICINE

Theoretical Medicine I. Diseases of the respiratory and circulatory systems; specific infectious diseases; diseases of the blood; diseases of the ductless glands; certain of the diseases of metabolism, etc.

Theoretical Medicine II. Diseases of the nervous system; diseases of the gastro-intestinal system, including affections of the liver, gall bladder, pancreas and peritoneum; also nephritis and diabetes mellitus.

Physical Diagnosis. Physical signs in health and disease and their clinical demonstration on cases in the Out-Patient Department of the Winnipeg General Hospital.

Clinical Medicine I. Students will spend time in the medical wards, examining patients, taking histories of cases, and carrying out laboratory investigation of them under direction. In addition, clinical lectures are given in the wards.

Clinical Medicine II. The work of the first course is continued, the students spending their entire mornings in the medical and surgical wards, recording results of personal examinations of cases and attending lectures and demonstrations. They will also attend and report on autopsies of fatal cases.

Pediatrics. Management and care of premature infants; diseases of the newly-born; hygiene of infancy; infant feeding and general therapeutics; diagnosis and treatment of infectious and contagious diseases in children.

DEPARTMENT OF SURGERY

Theoretical Surgery I. Inflammations; acute surgical infections; shock; chronic surgical infections; tumors; blood vessels; lymph vessels; sprains and dislocations; bones, injuries and fractures.

Theoretical Surgery II. Regional surgery. All that is not included in Theoretical Surgery I above.

Splints and Bandages. Methods of diagnosis; differentiation of normal and abnormal; training in application of bandages, dressings and splints in the Out-Patient Department of the hospital.

Clinical Surgery I. The course is planned to start the student in the application of surgical knowledge, gained in the first three years. The actual diagnosis of cases in the wards is begun. Opportunity is given of examining the patient and of writing case notes.

Clinical Surgery II. This course continues the work begun in the preceding one. Bedside lectures are given, and special methods of treatment are explained and demonstrated.

Operative Surgery. Twenty-five practical demonstrations are given, presenting, first of all, the anatomy of the region in question, and then the various steps of the operation, with blackboard illustrations, diagrams and specimens. The students afterwards individually, in rotation, perform the operations on the cadaver under supervision.

Orthopedic Surgery. Twenty-five lectures or demonstrations are given, nearly all clinical. Special attention is paid to methods of examination and differential diagnosis. Exhibition of orthopedic apparatus; instruction in plaster-of-Paris work; demonstration of orthopedic operations.

DEPARTMENT OF OBSTETRICS AND GYNAECOLOGY

Obstetrics I. Physiology of obstetrics; normal pregnancy, normal labor, normal puerperium; physiology of the foetus; anatomy of the female genital organs.

Obstetrics II. Pathology of obstetrics; abnormal pregnancy, abnormal labor, abnormal puerperium; obstetrical operations.

Clinical Obstetrics. Attendance at not less than eight cases of labor.

Gynaecology. A course of thirty-five lectures on the diseases of women, including (a) the embryology and anatomy of the female pelvic organs; (b) symptoms, diagnosis, pathology and treatment of pathological conditions; (c) presentation of specimens.

Clinical Gynaecology. Twenty-five bedside demonstrations, and the study of surgical technique.

DEPARTMENT OF OPHTHALMOLOGY, OTOLOGY AND LARYNGOLOGY

Some twenty lectures are given on the diagnosis and treatment of some of the common affections of the eye, ear, nose and throat, with clinical instruction in the Winnipeg General Hospital, designed to supplement the information given in the lecture course and the student's reading.

DEPARTMENT OF ANATOMY

Theoretical Anatomy I. The tissues; bones and joints—thorax, abdomen, pelvis and upper limb; muscular system; circulatory system; respiratory system; alimentary system; urogenital system.

Practical Anatomy I. Dissection of upper limb, thorax, abdomen and pelvis.

Theoretical Anatomy II. Bones and joints—head, neck and lower limb; central nervous system; special sense organs; lymphatics; demonstrations on regional anatomy.

Practical Anatomy II. Dissection of head and neck, special sense organs, brain and lower limb

Human Embryology. General embryology: segmentation, differentiation of embryonic layers, formation of foetal appendages. Special embryology: circulatory system, alimentary system, nervous system, urogenital system, respiratory system.

Clinical Anatomy. The anatomy of the whole body in its medical and surgical aspects.

DEPARTMENT OF THERAPEUTICS, MATERIA MEDICA AND PHARMACOLOGY

Therapeutics and Materia Medica. Incompatibility of drugs, administration, dosage; prescription writing; classification of drugs and their preparations; physiological action and therapeutic uses of the drugs that are in common use.

Pharmacology. (Given in 1919-1920 by Department of Physiology; see Courses 21, 22, page 88.)

DEPARTMENT OF HYGIENE

Hygiene. A course of twenty-five lectures, covering the following subjects: Prevention of communicable diseases; foods; air; water; soil; sewage and refuse disposal; vital statistics; schools; industrial hygiene; disinfection; eugenics; mental hygiene; sanitary legislation, etc.

DEPARTMENT OF MEDICAL JURISPRUDENCE

Medical Jurisprudence. A course of lectures covering various phases of medico-legal matters such as physicians' contracts, expert testimony, malpractice, life insurance examinations, quarantine, industrial accidents, blood stains, poisons, medical legislation.

†CURRICULUM IN LAW

The University of Manitoba confers one degree in Law, viz., Bachelor of Laws (LL.B.). The following are the requisites for proceeding in course to this degree.

BACHELOR OF LAWS

A teaching body, known as The Manitoba Law School, has been established under the direction of trustees appointed jointly by the University of Manitoba and the Law Society of Manitoba and a three years' course of instruction in Law is provided, covering the work required by the University for the degree of Bachelor of Laws and by the Law Society for admission to practice as an Attorney-at-Law. The work of this course in so far as it is required of candidates for the University degree is outlined below.* It is possible for a student who desires simultaneously to qualify for the degree of Bachelor of Laws and to satisfy the requirements of the Law Society for admission to practice, to do so by taking such additional subjects as are necessary to complete both curricula.

Matriculation

The requirements for Matriculation for Law have recently been increased and all students entering upon the course must now have standing of the First Year in Arts, or its equivalent. For details see the Arts Calendar. *This Matriculation must be clear of all conditions before the student enters upon the First Year of the course.*

FIRST YEAR

1. **English Constitutional Law and History.** Maitland, Lectures on the Constitutional History of England; Thomas, Leading Cases.

2. **Real Property.** Nature of real property and definitions; tenures, estate in fee simple; estates tail; estates for life; joint tenancy and tenants in common; equitable estate; conveyance; reversion; remainders; executory interests; limitations; wills affecting realty; escheats and forfeitures; mortgages. Book recommended: Williams, Real Property, or Goodeve, Real Property. Statutes, Manitoba—Cap. 62, Escheats and Forfeitures; Cap. 63, Estates Tail; Cap. 106, Joint Tenancy and Tenancy in Common; Cap. 21 (1918), Dower Act.

3. **Personal Property (Elementary).** Definitions; chose in possession; ownership; alienation; transfer of ownership; the Bills of Sale Act; the Bulk Sales Act; lien notes, etc.; chattels which descend to the heir; choses in action; joint ownership and joint liability; wills affecting personality; intestacy. Book recommended: Williams, Personal Property, or Goodeve, Personal Property. Statutes, Manitoba: Cap. 17, Mortgages and Sales of Personal Property; Cap. 23, The Purchase, Sale and Transfer of Stocks of Goods in Bulk; Cap. 115, Lien Notes; Cap. 204, Wills.

4. **Contracts (Generally).** Definitions; offer and acceptance; form and consideration; capacity; reality of consent; legality of object; limits of obligation; assignment; interpretation; modes of discharge; remedies for breach; relation of principal and agent. Books recommended: Anson, Contracts; Caporn, Leading Cases on Contracts.

5. **Torts.** General principles; particular torts; defamation; malicious prosecution; maintenance; seduction; trade molestation; deceit or fraud;

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† The Curriculum in Law, herewith appended, is being revised and for definite announcement students should consult the Curriculum issued by the Manitoba Law School.

* For number of lectures in each course, time-table, etc., see the announcement of Manitoba Law School.

negligence; damage from dangerous things; liability of employers; nuisances, trespass; petty trespasses. Book recommended: Underhill, Torts (Canadian Edition). Statutes, Manitoba: Cap. 199, Petty Trespasses.

6. **Criminal Law.** Introduction and nature of a crime; exemptions from responsibility; inchoate crimes; definitions of particular crimes; innocent homicide; culpable homicide; other offences against the person; injuries to property; burglary; theft; false pretences; forgery; offences against the State; conspiracy; perjury; bigamy; libel. Books recommended Kenny, Outlines of Criminal Law, with the portions of The Criminal Code applicable to these topics. Dom. Cap. 146.

7. **Jurisprudence.** Holland, Jurisprudence.

SECOND YEAR

1. **Canadian Constitutional Law and History.** B.N.A. Act, Lefroy, Leading Cases and the following cases: Barrett v. City of Winnipeg (1892) A.C. 454; Brophy v. Atty.-Gen. Manitoba (1895) A.C. 202; Atty.-Gen. Manitoba v. Manitoba License Holders' Assn. (1902) A.C. 73; Atty.-Gen. Canada v. Atty.-Gen. Ontario (1894) 23 S.C.R. 458; Brewers' and Malsters' Assn. v. Atty.-Gen. Ontario (1897) A.C. 231; Fielding v. Thomas (1896) A.C. 610; Cushing v. Dupuy (1880) 5 A.C. 409; Cotton v. Rex (1914) A.C. 176; John Deere Plow Co. v. Wharton, 84 L.J., P.C. 64; Bonanza Creek Case (1916), 1 A.C. 566; The Manitoba Act.

2. **Real Property.** The subjects of the First Year Course will be reviewed and the following will be treated in addition: Powers; perpetuities; incorporeal hereditaments; involuntary alienation; mortgages; limitations; registration (old system); boundary lines; estoppels in certain cases; married women's property; mechanics' liens; mortgages; Partition Act. Books recommended: Goodeve, Law of Real Property, or Williams, Law of Real Property. Statutes, Manitoba: Cap. 19, Boundary Lines and Line Fences; Cap. 64, Estoppels in Certain Cases; Cap. 116, The Limitation of Suits Relating to Real Property, and the Times of Prescription in certain cases; Cap. 123, The Property of Married Women; Cap. 125, Liens of Mechanics, Wage Earners and Others; Cap. 130, Mortgages; Cap. 150, The Partition of Real Estate; Cap. 172, The Registration of Deeds and Other Instruments Affecting Lands; Cap. 54, The Devolution of Estates of Deceased Persons.

3. **Personal Property and Commercial Transactions.** The subjects of the First Year Course will be reviewed, and the following will be treated in addition: Possession; bailment; sellers' lien; stoppage; sale of goods; delivery; representation; condition precedent; warranty; bills of lading; delivery orders; sales by agents; gifts; bills of sale; choses in action; insurance; debts and guarantee; shares and stock; negotiable instruments; interest; statute of limitations; devolution; persons under disability; fraudulent and preferential assignments. Books recommended: Goodeve, Law of Personal Property; Willis on Sale of Goods Act. Statutes, Manitoba: Cap. 12, Assignments and Preferences by Insolvent Persons; Cap. 17, Mortgages and Sales of Personal Property; Cap. 23, The Purchase, Sale and Transfer of Stocks of Goods in Bulk; Cap. 74, The True Construction of the Act passed in the Thirteenth Year of the Peign of Queen Elizabeth, and Chaptered Five, and intituled "An Act Against Fraudulent Deeds, Alienation, etc"; Cap. 105, Workmen's Compensation Act; Cap. 123, The Property of Married Women, Cap. 174, The Sale of Goods Act. Dominion: Cap. 118, Bills of Lading Act; Cap. 119, Bills of Exchange Act: Cap. 120, Interest Act.

4. **Equity.** The origin of equity; uses and trusts; the modern trust; creation of a trust; trusts implied, resulting and constructive; the rights

and duties of trustees; the duties of trustees; the nature of equitable estates and interests; the present relations of equity and the common law; the remedies for breach of trust; satisfaction and ademption; administration of assets; conversion; election; specific performance; injunctions; mortgages. Book recommended: Maitland, Lectures on Equity.

5. **Evidence.** General view of the English law of evidence; witnesses; documents; rules as to admissibility and effect of evidence; judicial notice; burden of proof; presumption; primary and secondary evidence; hearsay evidence. Books recommended: Best, Evidence (Can. Ed.); Cockles, Leading Cases. Statutes, Manitoba: Cap. 65, Witnesses and Evidence; Dominion, Cap. 145, Canada Evidence Act.

6. **Roman Law.** Ledlie, Translation of Sohm. Kelke, Epitome.

THIRD YEAR

1. **Real Property.** (*a*) The Real Property Act, Statutes, Manitoba: Cap. 171, The Real Property Act. List of cases to be prescribed.

(*b*) The Law of Landlord and Tenant—creation of the relationship; freehold tenancies; leashold tenancies; instrument; agreement; attornment; estoppel; parties; right to possession and enjoyment; rent and subjects arising therefrom; change of parties; determination of the Relationship. Book recommended; Bell, Landlord and Tenant. Statutes, Manitoba; Cap. 55, Distress and Extra Judicial Seizures; Cap. 109, Landlords and Tenants and the Eviction of Overholding Tenants or those failing to pay rent.

2. **Equity.** Trusts and trustees; Donatio mortis causa; doctrines of equity; conversion and election; satisfaction and ademption; administration of assets; mortgages; liens and charges; penalties and liquidated damages; married women's property; custody and maintenance of infants; mistake; fraud; specific performance; injunctions; contribution; partition. Book recommended: Strachan, Leading Cases. Statutes, Manitoba: Cap. 200, Trustees, Executors, Administrators and other Persons occupying fiduciary positions.

3. **Commercial Contract Law.** (*a*) Negotiable Instruments. (*b*) Sale of Goods. (*c*) Principal and Surety. (*d*) Bailment. (*e*) Insurance. The student is required to have a more than elementary knowledge of these subjects.

4. **Torts.** Assault; false imprisonment; malicious prosecution; maintenance; injuries in family and contractual relations; defamation; (1) libel; (2) slander; (3) slander of title; (4) slander of goods; deceit; trespass to land and dispossession; trespass to goods and conversion; negligence; nuisance; tort and contract; damage by intervention of third party; breach of statutory duty; contribution between joint tortfeasors; tort and felony; survival of causes of action; married women and infants; volenti non fit injuria; master and servant; jurisdiction. Book recommended: Radcliffe and Miles, Cases Illustrating the Law of Torts. Statutes: (1) Compensation to Families of Persons Killed by Accident, Man. Cap. 36; (2) Liability of Employers in Certain Cases, Man. Cap. 61; (3) Compensation to Workmen for Accidental Injuries Suffered in the Course of Their Employment, Man. Cap. 209.

5. **Partnership.** Essential elements; creation of a partnership; relation of partners to persons dealing with them; relation of partners to one another; dissolution; insolvency. Book recommended: Pollock, Digest of the Law of Partnership. Statutes, Manitoba: Cap. 151, The Law of Partnership.

6. **Company Law.** Dominion and Manitoba Companies Acts. Statutes, Dominion: Cap. 79, Companies Act; Cap. 144, Winding-up Act:

Manitoba, Cap. 35, Companies; Cap. 205, The Winding-up of Companies. Book recommended: Robson & Hugg's Leading Cases.

7. **Municipal Law.** Manitoba Municipal and Assessment Acts (Leading Cases to be Prescribed). Statutes, Manitoba: Cap. 133, Municipal Institutions; Cap. 134, Assessment and the Collection of Taxes; and amendments to these Acts. Book recommended: Robson & Hugg's Leading Cases.

8. **History of English Law.** Pollock and Maitland, History of English Law, or Holdsworth, History of English Law. Vols. II. and III.

9. **International Law.** Hall, International Law. Bentwich, Leading Cases on International Law.

It is compulsory that all students pursuing the above curriculum, who reside in Winnipeg or its environs, shall attend at least 70 per cent. of the lectures given in the Law School in their respective years. Students residing elsewhere may, at the discretion of the Trustees of the Law School and the University Board of Studies, be accepted as extra-mural students. Application for this privilege should be made to the Registrar.

Applications will not be accepted for extra-mural registration in Law from students resident outside the Province of Manitoba, except where such students are graduates in Arts of the University of Manitoba, or of some other University recognized by it.

Students are enrolled by the Recorder of the Law School as candidates for the LL.B. degree in any year of the course only on presentation of a certificate of registration for that year from the Registrar of the University.

The first term of the 1919-20 session extends from October 7th to December 23rd, 1919, inclusive and the second term from January 5th to March 26th, 1920, inclusive. The examinations will be given in April beginning on the 19th. The week, September 16th to 23rd, inclusive, is registration week in the Law School. Students who fail to register during this week will be required to pay an additional $4.00 over and above their tuition fee. No registration will be accepted after October 6th, except in special cases to non-resident students.

The following fees are required:

By the University—	
Registration (initial enrollment)	$ 2.00
Degree	10.00
By the Law School—	
Tuition, each year	50.00
Examination, each year	5.00
Late Registration	4.00

CURRICULUM IN PHARMACY

DIPLOMA IN PHARMACY

The University of Manitoba has entered into an arrangement with the Pharmaceutical Association of Manitoba whereby the work of instruction in Pharmacy of students desiring to qualify as licensed Pharmaceutical Chemists in Manitoba (formerly carried on by the Association in its own college, known as the Manitoba College of Pharmacy), is undertaken by the University. For the present, instruction in the professional subjects is be given in the College building at 422 Notre Dame Avenue, while for Chemistry, Physics, Physiology, Biology, Botany and Mineralogy, the students come to the University. The Association continues to prescribe the preliminary educational qualifications, the conditions of apprenticeship and practical training, admission fees, etc., and issues the license or diploma, the University being responsible only for the work of instruction and examination. Similarly, the Association determines the value of all certificates or other credentials from other Associations or institutions, and reports to the University on the credit to be given thereon on the course for the diploma in Pharmacy.

The course covers two academic years, as follows:

First Year

			Fall Term		Spring Term	
Course Nos.	Page	SUBJECT	Lecture Hours per week	Lab. Hours per week	Lecture Hours per week	Lab. Hours per week
1, 2; 23, 24	85	Chemistry	4	3	4	3
1, 2; 5, 6	125	Pharmacy	3	4	3	4
9, 10	125	Materia Medica	2		2	
13, 14	125	Prescriptions	2		2	
9	82	Mineralogy	2			
1, 3	89	Zoology	2	2		
1, 2; 3, 4	81	Botany	2	2	2	2

Second Year

			Fall Term		Spring Term	
Course Nos.	Page	SUBJECT	Lecture Hours per week	Lab. Hours per week	Lecture Hours per week	Lab. Hours per week
5, 6; 27, 28	84-85	Chemistry	3	6	3	6
3, 4; 7, 8	125	Pharmacy	2	3	2	3
1, 2; 3, 4	78	Physics	4		4	
11, 12	125	Materia Medica	2	3	2	2
	87	Biochemistry				

The following excerpts from the "Manitoba Pharmaceutical Act" and the By-Laws of the Council of the Pharmaceutical Association, touching the matters of preliminary educational qualification, conditions of apprenticeship, etc., are appended:

THE PHARMACEUTICAL ACT

(4 Geo. V., Cap. 78, 1914)

* * * * *

15. Before any candidate shall be entitled to be registered as a certified apprentice he shall,—

(*a*) produce to the council satisfactory evidence of a good moral character;

(*b*) pass such examination or examinations as the council shall have prescribed or shall prescribe, or produce to the council satisfactory evidence of requisite knowledge

16. Before any candidate shall be entitled to be registered as a certified clerk he shall,—

(*a*) produce to the council satisfactory evidence that he has actually served as a certified apprentice for at least two years to a licensed pharmaceutical chemist who has during such period been engaged in actual practice as a compounder of physicians' prescriptions;

(*b*) pass such examination (to be called the "minor examination") as the council shall have prescribed or shall prescribe, or produce to the council other satisfactory evidence of requisite knowledge and experience.

(2) No person shall be competent to be registered as a certified clerk unless he shall have attained the age of at least eighteen years.

17. Before any candidate shall be entitled to be registered as a licentiate pharmaceutical chemist he shall,—

(*a*) produce to the council satisfactory evidence that he has served at least two years as a certified clerk or at least four years as a certified apprentice to a licensed pharmaceutical chemist who has been during such periods respectively in actual practice as a compounder of physicians' prescriptions, and has attended such course of instruction as the council shall prescribe; time spent in attendance on a regular course of lectures and instruction in any college or school of pharmacy recognized and approved by the council shall be considered part of such periods of service respectively;

(*b*) produce to the council satisfactory evidence that he has passed the minor examination;

(*c*) pass such examination (to be called the "major examination") as the council shall have prescribed, or shall prescribe, or produce to the council other satisfactory evidence of requisite knowledge and experience.

(2) No person shall be registered as a pharmaceutical chemist who has not attained the age of twenty-one years.

19. The council may in its discretion accept the diploma or other authenticated certificate of examination of any other competent examining board out of the Province of Manitoba, or of the University of Manitoba, as sufficient evidence of qualification of any applicants to be registered under this Act as certified apprentice, certified clerk or pharmaceutical chemist respectively.

BY-LAWS OF THE PHARMACEUTICAL ASSOCIATION OF MANITOBA

* * * * *

11. Every candidate for registration as a Certified Apprentice must be at least fourteen years of age, and must produce evidence that he holds a Third Class Teachers' Certificate of the Province of Manitoba, or evidence of having passed such examination in any University in His Majesty's Domains or such examination of the Department of Education of any Province of the Dominion of Canada, as in the opinion of the council is equivalent to such Third Class Teachers' Certificate.

DEGREE IN PHARMACY

Bachelor of Pharmacy

The University of Manitoba confers the degree of Bachelor of Pharmacy (Phm.B.). The following are the requisites for proceeding in course to this degree.

Matriculation

Candidates for the degree of Bachelor of Pharmacy must either:

1. Have passed a Matriculation Examination accepted by the University of Manitoba; or

2. Be the holders of such other certificates as in the opinion of the University may be equivalent thereto.

Additional Preliminary Requirements

(*a*) Candidates for the degree resident in the Province of Manitoba must have complied with all the requirements prescribed from time to time by the Council of the Pharmaceutical Association of Manitoba for admission to examination for the diploma licensing to practice Pharmacy in Manitoba.

(*b*) Candidates for the degree not resident in the Province of Manitoba:

(1) Must have devoted at least four years (not being engaged in any other business) to the study of Pharmacy, being apprenticed during that time to a regular Pharmaceutical Chemist.

(2) Must have attended a full course of lectures, embracing all the subjects of the curriculum, the length of each course being not less than that required from time to time by the Council of the Pharmaceutical Association of Manitoba, and including practical work at some College of Pharmacy recognized by this University.

All candidates who have, prior to June 1, 1905, received the diploma of the Manitoba College of Pharmacy, shall not be required to conform to the above, but shall be allowed their degrees on passing the examination in the subjects hereinafter given.

Examinations

Candidates for the degree must pass an examination to be held in the month of April in each year, and must present to the Registrar of the University certificates covering all the requirements relating to such candidates as given above.

The subjects for this examination are as follows:

(*a*) Botany, with use of the microscope.

(*b*) Theoretical and Practical Chemistry.

(*c*) Physics.

(*d*) Materia Medica, and Toxicology.

(*e*) Theory and Practice of Pharmacy, including interpretation of Prescriptions and Dispensing.

These examinations are partly written and partly practical.

No candidate is considered as having passed the examination who has not obtained 67 per cent. of the marks allotted; nor is a candidate considered as having passed in any subject who has not obtained at least 50 per cent. of the marks allotted to such subject.

The examination in Botany is that of the Second Year in Arts, the examination in Theoretical Chemistry is that of the Second Year in Arts, and the examination in Physics is that of the First Year in Arts of the University of Manitoba. Candidates for the degree must have attended the University lectures in these subjects during a full annual session before presenting themselves for examination.

Fees

For Matriculation or registration of Matriculation	$ 5 00
For Tuition (each course of study)	8 00
For annual Examination	8 00
For the Degree of Phm.B	10 00

DEPARTMENT OF PHARMACY

Henry E. Bletcher, Phm.B..*Professor*

N.B.—For key to system of numbering courses, see page 4.

1, 2. **Pharmacy I.** First Term: An exposition of the principles on which pharmaceutical operations are based; the utilization of these processes for specific ends; the arithmetical calculations required in operative pharmacy; the historical development of pharmacy. Second Term: An extended consideration of the galenical preparations of the British Pharmacopoeia; the comparison of other important national pharmacopoeias with the British Pharmacopoeia. Three hours a week.

3, 4. **Pharmacy II.** The application of Chemistry to the preparation of medicines both inorganic and organic with especial reference to the British Pharmacopoeia; methods of manufacture; characters of pure products; possible impurities; tests. Study of unofficial chemicals of interest. Two hours a week.

5, 6. **Practical Pharmacy I.** This course includes practice in the physical operations used in pharmacy such as determination of weight, volume, temperature, specific gravity, melting point, boiling point, etc.; the study of simple heat phenomena; simple heat processes; filtration; evaporation, crystallization, etc.; distillation; dispensing of classes of preparations commonly prescribed by physicians; dispensing of difficult prescriptions; care of apparatus; methods of work. Four hours a week.

7, 8. **Practical Pharmacy II.** The preparation and purification of typical inorganic and organic chemical substances used as medicines; the manufacture of galenical preparations; the assay of selected preparations. Three hours a week.

9, 10. **Materia Medica I.** The detailed study of organic drugs, particularly those of the British Pharmacopoeia; the principal facts relating to their sources, preparation, identification, purity, characteristics, constituents, storage, and toxicology. Two hours a week.

11, 12. **Materia Medica II.** The study of the chemical nature of important classes of plant constituents including among others the organic acids, fixed oils, volatile oils, alkaloids, glucosides, tannins, carbohydrates; products of destructive distillation; fermentation products. Two hours a week.

13, 14. **Prescriptions.** This course includes the study of the Latin of Pharmacy, posology, prescription arithmetic, methods of compounding prescriptions, recognition and treatment of incompatibilities, the Pharmaceutical Act, and all other topics of the course in Pharmacy not specifically classified elsewhere. Two hours a week.

CURRICULUM IN AGRICULTURE

The University of Manitoba confers a degree in Agriculture, viz., Bachelor of Science in Agriculture (B.S.A.). The following are the requisites for proceeding in course to this degree.

BACHELOR OF SCIENCE IN AGRICULTURE

The course for the degree of Bachelor of Science in Agriculture ordinarily extends over a period of five years. It is only during the last three, however, that the student is definitely regarded as a candidate for the degree.

Entrance Requirements

A student may be admitted to the course leading to the degree of B.S.A. by fulfilling either of the following requirements:

1. The completion of the first two years of the Diploma Course in Agriculture of the Manitoba Agricultural College, with a grade in the Second Year of that course of at least 65 per cent. in English and 60 per cent. in general proficiency. For details as to the terms of admission, curriculum, standards, etc., of the Diploma Course, see the calendar of Manitoba Agricultural College. An equivalent standing secured in another Agricultural College whose standards are recognized by the University as substantially equivalent to those of Manitoba Agricultural College will be accepted in lieu of the above.

Students entering with this qualification are regarded as taking the "full degree course."

2. The Grade XII. or First Class Teacher's Non-professional Certificate of the Manitoba Department of Education or the Senior Matriculation of a recognized University, or their equivalent.

Students entering with this qualification are regarded as taking the "teachers' course." It is intended to prepare teachers of agriculture for consolidated schools and intermediate and high schools. The requirements of the Department as to professional training must, of course, be complied with.

Provision is being made whereby students entering upon the degree course with previous teacher's training and qualifications can take the first of the three years required in three summer courses of six weeks each instead of in a regular winter course.

Details of Course

All instruction in Agriculture is given in Manitoba Agricultural College, in affiliation with the University, and all matters connected with the admission of students, their classification, discipline, examinations, promotion, etc., are closely under the surveillance of the president and Faculty of the College, subject in a general way to University jurisdiction.

All students proceeding to the degree will be required to spend the two summers between the Third and Fifth Years at practical or experimental work under the direction of the Farm Practice Committee of the College Faculty. It is highly important that graduates be proficient, not only in the science of Agriculture, but also in the practice. They must be able to do what is needed to be done about a Manitoba farm, or in the particular branch of work selected as a specialty.

Commencing with the Fourth Year, the candidate for the degree is allowed to specialize in any one of the following courses:

1. Field and Animal Husbandry.
2. Dairy Husbandry.
3. Horticulture and Forestry.
4. Agricultural Engineering.

Course No. 1 above is the main course and is elected by the largest number of students. Candidates for the degree in the "Teachers' Course" must take No. 1, since it offers the best all-round training in the science of agriculture. Classes in any of the other special courses will be given only in case at least four students elect to take them.

First and Second Years

(See Calendar of Manitoba Agricultural College)

The work of these two years is that of the first two years of the three-year Diploma Course of Manitoba Agricultural College, which is designed to meet the requirements of young farmers who are desirous of improving their general education and learning scientific methods of agriculture. During the First Year much time is devoted to the study of principles; in the Second and Third Years a more extended application of these to various phases of work on the farm is made. A student is permitted to proceed with the Degree Course in Agriculture only in case he has shown special ability in the first two years; otherwise, he must complete the three-year Diploma Course first.

Third Year

Animal and Field Husbandry Course

(Taken by all students entering by way of the diploma course*)

	Credits		Credits
Engineering	200	Physics	300
English	400	Mathematics	200
Botany and Biology	500	Agricultural Economics	200
Horticulture and Entomology	500	Veterinary Science	300
Chemistry	600		

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*Students who intend to qualify as teachers, and who already have a First-Class Teacher's certificate or its equivalent, take in the first year of their course a special program, as outlined below, covering that part of the work of the first, second and third years in the full degree course not already taken by them in preparation for their teachers' certificate. The second and third years of the Teachers' Course coincide with the fourth and fifth years of the ordinary degree course.

	Credits		Credits
Agricultural Engineering	600	Botany and Biology	500
Animal Husbandry	800	Chemistry	600
Dairy Husbandry	400	Poultry Husbandry	300
Field Husbandry	700	Veterinary Science	700
Horticulture and Entomology	800		

It is impossible to cover all this work in one winter session, so that it is necessary to supplement it with at least one summer course. The College reserves the right to determine what work the student shall be engaged in during the intervening summers.

Fourth Year

Animal and Field Husbandry Course

	Credits		Credits
Animal Husbandry	400	Horticulture and Entomology	300
Field Husbandry	200	Chemistry	400
Engineering	400	Bacteriology	500
English	300	Physics	200
Botany and Biology	200	Agricultural Economics	200

Dairy Husbandry Course

Dairying	1400	Dairy Bacteriology	200
Engineering	200	Chemistry	200
Animal Husbandry	400	Economics	200
Fodder Crops	200	English	300

Horticulture and Forestry Course

Field Husbandry	200	Drainage and Irrigation	200
Horticulture	300	English	300
Forestry	300	Entomology	300
Bacteriology	300	Plant Physiology and Histology	100
Botany	200	Plant Pathology	200
Chemistry of Insecticides and Fungicides	200	Economics	200

Agricultural Engineering Course

Mechanical Engineering	300	English	300
Agricultural Economics	200	Mathematics	500
Chemistry	400	Physics	200
Drainage and Surveying	400	Shop Practice	400
Drawing	200		

Fifth Year

Animal and Field Husbandry Course

Animal Husbandry	400	English	300
Field Husbandry	600	Agricultural Economics	400
Dairy	300	Principles of Teaching	200
Poultry	300	Option	400

Dairy Husbandry Course

Animal Husbandry	300	Dairy Chemistry	300
Field Husbandry	200	English	300
Dairy Principles and Practice	1600	Principles of Teaching	200
Agricultural Economics	200		

Fifth Year—Continued

Horticulture and Forestry Course

	Credits
Horticulture	100
Chemistry	200
Entomology	300
Plant Breeding	200
Plant Pathology	100
Cultivated Plants	100
Commercial Botany	100
Botany of Forest	200

	Credit
Botany of Grasses	100
Bacteriology	200
Economics	200
English	300
Principles of Teaching	200
Refrigeration and Cold Storage	200
Soils	200

Agricultural Engineering Course

Engineering—	
Civil Engineering	200
Mech. of Engineering	200
Trigonometry	100
Farm Machinery	200
Concrete	200
Mechanical Drawing	300
Shop Work	300

Chemistry	200
Electricity	200
Economics	200
English	300
Principles of Teaching	200
Seminar	100

For details as to the content of the above courses see the calendar of Manitoba Agricultural College. Copies may be obtained from Prof. G. A. Sproule, Registrar.

CURRICULUM IN HOME ECONOMICS

The University of Manitoba confers a degree in Home Economics, viz., Bachelor of Home Economics (B.H.Ec.). The following are the requisites for proceeding in course to this degree:

BACHELOR OF HOME ECONOMICS

The course for the degree of Bachelor of Home Economics extends over a period of five years. It is only during the last three, however, that the student is definitely regarded as a candidate for the degree. The student applying for admission to the Third Year, which is the first definitely belonging to the degree course, must have completed the two-year Home-makers' Course of the Manitoba Agricultural College, or its equivalent, and must have obtained in her Second Year 65 per cent. on her work in English, and a general proficiency standing of 60 per cent. She must also satisfy the Faculty of the Agricultural College of her ability to proceed with advanced work.

A College regulation requires attendance at 90 per cent of the lectures, and practical work in a subject before a student is permitted to go up for examination in that subject.

The pass mark is 50 per cent. in each subject (with a maximum of three failures allowed) and 65 per cent. on the aggregate of the marks on all subjects.

The course, as at present outlined, is as follows:

Third Year

Household Art—	Credits
Advanced Dressmaking	200
History of Costume	100
Home Furnishing	200
Millinery	100
Household Science—	
Book Reviews	100
Foods	100
History of Home Life	100
Household Management	100

	Credits
Biology	300
Chemistry	400
English	400
History	200
Physics	300
Mathematics	200
Physical Culture	100

Fourth Year

Household Art (Major)—	
Clothing	200
Costume Design	100
History of Art	100
Theory and Practice Teaching	200
Household Art (Minor)—	
Dressmaking	200
Household Science (Major)—	
Dietetics	200
Economics of the Household	200
Invalid Cookery	200

Household Science (Minor)—	
Invalid Cookery	200
Bacteriology	400
Biology	200
Chemistry	300
English and History	400
Physics	200
Physical Culture	100
Economics	200
Demonstrations	200

Students will take a major in Household Art and a minor in Household Science or *vice versa.*

Fifth Year

	Credits
English	400
Economics and Rural Sociology	400
Chemistry	200
Household Art (Major)—	
Clothing	400
Millinery	100
Arts	100
Teaching Methods	200
Household Art (Minor)—	
Clothing	200
Teaching Methods	200

	Credits
Household Science (Major)—	
Dietetics	200
Economics of the Household	200
Equipment and Courses	200
Teaching Methods	200
Household Science (Minor)—	
Equipment and Courses	200
Teaching Methods	200

Students will take a major in Household Science and a minor in Household Art or *vice versa*.

For details as to the contents of the above courses see the calendar of Manitoba Agricultural College. Copies may be obtained from Professor G. A. Sproule, Registrar.

By a recent decision of the University Council it will in future be possible to proceed to the degree of

BACHELOR OF ARTS

by taking the course outlined below, the outstanding feature of which is the combination, in the Third and Fourth Years, of work in Arts, taken at the University or one of its affiliated Arts Colleges in Winnipeg, and of work in Home Economics, taken at Manitoba Agricultural College.

MATRICULATION

The matriculation for the course leading to the degree of Bachelor of Arts with the Home Economics option is the same as for any other course leading to the degree of Bachelor of Arts, for which see pp. 21-32.

UNDERGRADUATE COURSE

After having matriculated, the student of Arts and Home Economics is required to pass four examinations before being admitted to the degree of Bachelor of Arts, viz., the First Year, the Second Year, the Third Year and the Fourth Year examinations.

First Year

Course Nos.	Page	SUBJECT	Fall Term Lecture Hours per week	Fall Term Lab. Hours per week	Spring Term Lecture Hours per week	Spring Term Lab. Hours per week
5, 6, 7, 8,	52	English	4		4	
1; 4	73	Mathematics	4		4	
		A Foreign Language	4		4	
1, 2; 3, 4	78	Physics	4	2	4	
1, 2; 21, 22	83-84	Chemistry	4	3	4	3

Second Year

Course Nos.	Page	SUBJECT	Fall Term		Spring Term	
			Lecture Hours per week	Lab. Hours per week	Lecture Hours per week	Lab Hours per week
9, 10; 11, 12	52-3	English	4		4	
		A Foreign Language	4		4	
3, 4	67	History	3		3	
1, 2; 3, 4	80-89	Botany and Zoology	4	4	4	4
7, 8; 33, 34	85	Chemistry	2	*	2	*

Third and Fourth Years

After having completed the First and Second Years, as outlined above†, the student will select, for the Third and Fourth Years, a *major* or two *minors*‡ from the following list, to be taken along with a *major* in Home Economics in each year, viz., Classical Greek (major and minor), Latin (major and minor), English (major and minor), French (major and minor), German (major and minor), Philosophy (major and minor), History (major only), Political Economy (major and minor).

For details as to the content of the above courses consult the outlines given under the various departmental captions, following the indication as to pages given below:

Subjects	Courses into Which They Enter	Pages
Classical Greek	Major, Minor	45-47
Latin	Major, Minor	48-50
English	Major, Minor	51-55
French	Major, Minor	56-58
German	Major, Minor	58-59
Philosophy	Major, Minor	60-61
History	Major	67-69
Political Economy	Major, Minor	69-72
Home Economics	Major	130

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* An adaptation of Courses 33, 34 will be made and the laboratory time demanded will be later determined.

† For the session 1919-1920, but not subsequently, students will be accepted for enrollment in the Third Year of this course, who have taken the First and Second Years of the ordinary course in Arts and who have taken Inorganic Chemistry in the Second Year.

‡ In the Fourth Year the student who elects Plan A for the major in Home Economics (see page 130) should not take two *minors* in Arts but only a *major*.

EXAMINATION FOR DENTAL LICENSE

Under an amendment to the Manitoba Dental Association Act passed by the Provincial Legislature at its 1916 session, the University of Manitoba became "the sole examining body in dentistry" in the Province and preliminary legal steps were taken to enable the Manitoba Dental Association, either by itself or in conjunction with the University, to establish and conduct a school of dentistry.

The following are the clauses of the amended Act touching the matters in question:

AN ACT RESPECTING THE DENTAL ASSOCIATION OF MANITOBA

(R.S.M., 1913, Cap. 53, Amended March 10th, 1916)

* * * * *

16. The board shall also have power and authority to fix and determine the period for which every student shall attend some school of dentistry approved of by the board of directors and the period for which he shall be articled and employed under some duly licensed and registered practitioner, and to fix and determine the fees to be paid into the hands of the treasurer of the association before the applicant shall receive a certificate of license to practise the profession of dentistry or be entitled to registration under this Act, and also to fix the annual fee to be payable by each member of the association.

(*a*) The board of directors of said association shall have power, subject to the approval of the Lieutenant-Governor-in-Council, by itself or in conjunction with the University of Manitoba to establish and conduct a school of dentistry.

17. Every student prior to entering into articles of indenture with a licentiate of dentistry shall furnish a certificate from the University of Manitoba that he has passed the matriculation examination in the Arts Faculty of the University of Manitoba, or that he has an academic standing which, in the opinion of the council of the University of Manitoba, is equivalent thereto. The commencement of the term of any articled student shall date from the signing of his articles as aforesaid; provided that the council of the University of Manitoba may grant said certificate without requiring the student to pass said matriculation examination, if such student has been practising operative dentistry during the past ten years under the supervision of and under the direction of a duly qualified dentist.

18. The University of Manitoba shall be the sole examining body in dentistry in this Province, and the council of the University shall have power from time to time to grant to any person a certificate under the seal of the University that the council of the University have been satisfied that the person mentioned in the certificate is, by way of dental education and otherwise, a proper person to be registered under this Act; but such certificate shall not be granted until the person making such application shall have given such evidence of qualification, by undergoing an examination or examinations or otherwise, as the University may require, and the applicant shall in all other respects first comply with the rules and regulations of the University in that behalf.

(*b*) A candidate for admission to study shall be required to pass the matriculation examination in the Arts Faculty of the University of Manitoba, or to have an academic standing which, in the opinion of the council of the University of Manitoba, is equivalent thereto.

(*c*) Except as hereinafter provided every person before being permitted to practice shall be required to pass an examination or examinations in the following subjects: Histology, dental anatomy, anatomy, chemistry, metallurgy, physiology, materia medica, therapeutics, dental pathology, dental medicine and surgery, operative dentistry, prosthetic dentistry and orthodontia, anaesthetics and bacteriology, ethics and jurisprudence, and such other subjects as may from time to time be substituted for or be added to the foregoing by the council of the University of Manitoba, and to perform operations before the examiners, to exhibit specimens of his skill as a prosthetic dentist, and if called upon to construct practical cases in the presence of an examiner.

19. Examination of candidates for admission to study or to practise the profession of dentistry in the Province of Manitoba shall be held at such times as shall be fixed by the council of the University of Manitoba from time to time.

(*a*) Every person desirous of being examined shall, on or before a date prior to such examination, to be fixed by the council of the University, pay to the registrar of the University the required fees, and furnish him with satisfactory evidence of his right to take the examinations, and of his integrity and good morals, and in case of a candidate for admission to practise with satisfactory evidence that his term of indentureship has been fulfilled.

(*b*) The council of the University of Manitoba may from time to time, upon such terms as the council shall from time to time determine, grant to graduates, under-graduates or members of such dental schools, colleges or associations as the council shall from time to time determine to recognize such standing as to said council shall seem just.

(*c*) Notwithstanding anything herein contained a graduate in dentistry of any University or College recognized from time to time by the board shall, on presenting his diploma and testimony of good character and conduct to the board, receive, on payment of such fees as shall be fixed by the board, a permit to practise as an operator in dental surgery, and as a practitioner in dentistry in the office of and under the supervision of a person duly qualified to practise dentistry in Manitoba under this Act, but such permit shall not in any event extend beyond the time of the final examination held within one year from the date of said permit and shall not be renewed thereafter, provided that if such graduate is not now a resident of Manitoba he shall have graduated and received his diploma from such recognized University or College, since the first day of January, A.D. 1913.

The application of the examination clauses of the Dental Association Act is considerably limited by the following clause of "The War Amendment Act (1918) to the Dental Association Act."

5. Notwithstanding anything contained in the Dental Association Act, being chapter 53 of the Revised Statutes of Manitoba (1913) or any Act amending the same, the following provisions and regulations shall be in force during the continuance of the war which at present exists between His Majesty and certain European powers, and for one year after the declaration of peace by Great Britain, and for such further period as the Lieutenant-Governor-in-Council may by order-in-council direct:

(*a*) No examination in dentistry shall take place under the provisions of The Dental Association Act except for dental students who are already complying with the provisions of The Dental Association Act, and who are *bona fide* residents of the Province of Manitoba, and who are British subjects or subjects of one of the Allied countries.

(*b*) No license to practise dentistry shall be granted by the Manitoba Dental Association except:

(1) To students who are *bona fide* residents of the Province of Manitoba, an who pass the necessary examinations required by the Dental Association Act, and wh are British subjects.

(2) To those who become entitled to receive a license without examination under the provisions of section 21 of The Dental Association Act.

(*c*) No student shall hereafter be permitted to article as a student in dentistry who is not a British subject or a subject of one of the Allied countries, and who does not present to the board of directs of the Manitoba Dental Association satisfactory evidence that he is either exempt from military service or that he is not called up for service.

In exercise of the powers conferred by the legislation above outlined the Council of the University has authorized two examinations for Dental License in each year, in the months of January and of June respectively.

The subjects enumerated above in the Act as the subjects required for admission to license, are grouped for examination purposes as follows:

Part I.

1. Anatomy.
2. Chemistry and Metallurgy.
3. Physiology and Histology.

Part II.

4. Materia Medica and Therapeutics.
5. Bacteriology and Pathology.
6. Dental Medicine and Surgery, including Anaesthetics.
7. Operative Dentistry.
8. Prosthetics.
9. Orthodontia.
10. Ethics and Jurisprudence.

A minimum of 50 per cent. is required on each written paper with a minimum of 60 per cent. on the aggregate of all the written papers, and on each practical examination.

Students qualifying for examination by service under articles of indenture, with a licentiate of dentistry, may take Part I. of the examination, as indicated above, after the completion of two years of service, and Part II. at the end of four years of service. Students writing Part I. only may fail on one paper and have the privilege of supplemental examination; those writing Part II. only may fail on two papers and have the privilege of supplemental examination; candidates writing the whole examination may fail on three papers and have the privilege of supplemental examination; candidates failing on a larger number of papers than the above must repeat the entire examination.

Application for examination should be made in writing to the Registrar at least two weeks in advance of the opening of the same, on a blank form that will be supplied for the purpose. An examination fee of $25.00 is required, payable at the time the application is made This is distinct altogether from any registration or admission fees that may be required by the board of the Dental Association.

EXAMINATION FOR NURSES' REGISTRATION

AND FOR

ADMISSION TO "THE MANITOBA ASSOCIATION OF GRADUATE NURSES."

Under the terms of an Act respecting "The Manitoba Association of Graduate Nurses," (3 Geo. V., Cap. 114), passed by the Legislature of the Province in 1913, an association bearing the above name was incorporated for the purpose of maintaining a certain standard of qualification among those practising the profession of nursing the sick. The University of Manitoba was at the same time appointed to conduct the examination of applicants for admission.

Provision was made in the Act for the admission without examination up to July 1st, 1916, of all who had been engaged in nursing in the Province for a year prior to the date on which it came into force, viz., February 15th, 1913.

Other persons, not entitled to be registered under the above provision, but who have completed a regular course of training of at least three years in a recognized hospital or training school, may be admitted to membership in the Association on passing an examination as outlined below, conducted by the University of Manitoba, and on complying with such requirements as to application, payment of admission fee, etc., as may be laid down by the by-laws of the Association.

The next of these examinations will be held in Winnipeg, in June 1920. It will be (*a*) written, (*b*) oral and practical.

The examination will be independent of any text book, but the following are suggested for the guidance of prospective candidates in their reading:

1. *Medical Nursing, including Materia Medica—*

Robb, Isabel Adams Hampton—"Nursing—It's Principles and Practice." (C. C. Kaechert, Cleveland, Ohio.)

Dock, Lavinia L.—"A Textbook of Materia Medica." (G. P. Putnam & Sons.)

Paul, George P.—"A Textbook of Materia Medica for Nurses, including Therapeutics and Toxicology." (W. B. Saunders.)

2. *Surgical Nursing, including Operative Technique and Gynaecological Nursing.*

Kimber, Diana Clifford—"Anatomy and Physiology for Nurses." (New and revised edition—Macmillan Co.)

Fowler, Russell S.—"The Operating Room and the Patient." (W. B. Saunders.)

3. *Obstetrical Nursing* (at least seven cases)—

DeLee, Joseph B.—"Obstetrics for Nurses." (Saunders.)

4. *Diseases of Children.*

Holt, L.Emmett—"The Care and Feeding of Children

5. *Contagious Diseases.*

6. *Dietetics*—

Pattee, Adlida Frances—"Practical Dietics with Reference to Diet in Disease."

General Reference Books and Miscellaneous Texts—

Maxwell, Anna Caroline, and Pope, Amy Elizabeth—"A Textbook for Nurses and a Handbook for All Who Care for the Sick." (G. P. Putnam & Sons.)

Gould, George M.—"Practical Medical Dictionary."

Gould, George M., and Pyle, Walter L.—"A Cyclopedia of Practical Medicine and Surgery."

Hughes—"Practice of Medicine."

Stevens—"Practice of Medicine."

"Manhattan Eye, Ear, Nose and Throat." (W. B. Saunders.)

Application for examination should be made to the University and the required fee of $8.00 paid not later than June 1st. Blank forms of application may be obtained from the Registrar.

CURRICULUM IN COMMERCIAL EDUCATION

Candidates for the Diploma in Commercial Education must either:—

1. Have passed the Matriculation Examination required by the University of Manitoba; or

2. Be the holders of such other certificates as in the opinion of the University may be equivalent thereto; and have complied with the other requirements hereinafter specified.

Matriculation

Candidates for this examination shall take the following fixed subjects:

English,
History,
Mathematics;

and any two of the following options:

Latin,
French,
German.

The requirements in each of these subjects shall be the same as those for the Matriculation in Arts, and the same standard shall be required to entitle the candidate to pass. (See pages 21 to 32.)

Course of Study

After fulfilling the requirements in reference to the Matriculation Examination, the candidate shall complete a course of two years' duration. A diploma shall be given to those who are successful in passing an examination in the prescribed subjects.

First Year Examination

1. English,—as of the First Year in Arts.
2. French or German,—as of the First Year in Arts.
3. Modern History and Geography—"Colonies and Colonial Federations," ed. E. J. Payne. (Macmillan & Co. The English Citizen Series.)
4. Economic History—Clive Day—"History of Commerce."
5. Political Economy—Seager—"Introduction to Economics."

Second Year Examination

1. English,—as of the Second Year in Arts.
2. French or German,—as of the Second Year in Arts.
3. Political Economy,—J. S. Mill—"Principles of Political Economy" (Ed. Ashley, 1909.)
4. Commercial Law and Science.

The time of the examinations shall be the same as that of the examinations in Arts in each year.

EVENING COMMERCIAL COURSES

Under the direction of an Advisory Committee composed of representatives of various business interests, the Council of the University has instituted Evening Courses in Commerce. Upon the completion of one of these, the student is granted a certificate for the course. The following were offered during 1918-1919:

Accounting I
Accounting II
Accounting III
Auditing I
Auditing II
Commercial Law I
Commercial Law II
Business English

Accounting II, Auditing I and Commercial Law I, were attended by students preparing for the Intermediate Examination in Accountancy conducted by the University for the Institute of Chartered Accountants. Accounting III, Auditing II and Commercial Law II were attended by students preparing for the Final Examination in Accountancy. For fuller information regarding these classes see the special announcements to be later issued from the Registrar's office.

GENERAL REGULATIONS

REGISTRATION

The 1919-1920 session begins on Tuesday, September 16th, and lectures in Arts, Science, Medicine, Engineering, Architecture and Pharmacy open on Wednesday, September 17th.

Students who present themselves for registration at the Registrar's Office of the University later than 5 o'clock p.m., on Thursday, September 18th, will be required to pay the sum of $2.00 in addition to their tuition fee, or, in case all their classes are taken in an affiliated college will be subjected to a fine of $2.00.

No registration will be accepted after Monday, October 6th, unless the Board of Studies on investigation finds that a special concession is warranted.

The dates for the registration of extra-mural students are the same as those for students in attendance, and the same regulations apply, except that extra-mural students are not required to register in person, but may do so by mail.

All undergraduates in Medicine and Law must present certificates of registration from the University before registering in Manitoba Medical College, and the Manitoba Law School, respectively.

EXAMINATIONS

General Regulations.

1. The regular examinations for undergraduates in Arts, Science, Engineering, Architecture and Pharmacy are given in part in December and in part in April of each academic year. The same applies to subjects of the First Year in Medicine taught in the University. All other regular examinations are given in April only. For definite information as to the work upon which each of these sets of examinations is based, the student is referred to the curricula of the various years as set forth elsewhere in this Calendar. The date of the opening of the December examinations is fixed in each year by the Council of the University on recommendation of the Board of Studies. The April examinations open on the third Monday in that month in each year.

2. Examinations in Arts may be held at such outside centres in Manitoba, Saskatchewan, Alberta and British Columbia, as the Board of Studies may from time to time approve of; it being understood that this does not apply to practical examinations, where such are required.

Matriculation Examinations.

1. The Examinations for Matriculation into all Faculties are held twice in each year, beginning on the second Tuesday in June and on the second Thursday in September.

2. The examinations in June are conducted by the Department of Education of Manitoba for the University, concurrently with its own examinations for Teachers' Certificates, and in so far as the requirements for the two courses correspond, the two groups of candidates write upon the same papers. The University determines its requirements for entrance and its standards of examination, the joint examiners are appointed by mutual agreement, and the Matriculation examination results are submitted to the Board of Studies, which determines whether each candidate passes or fails and, in case he passes, determines his grading.

These examinations are held in Winnipeg and at a large number of outside points in the province.

In addition, the June Matriculation Examinations are held by the University on request at such points outside of Manitoba as may from time to time be approved by the Board of Studies.

3. The September Matriculation Examination is held at the University in Winnipeg only.

Credit for Term Work

1. At the close of each term the instructors in Arts in the University and the affiliated colleges may make a report on the work of each student for the term just closing in the form of an award of marks, to be based upon the results of recitations, reports, essays, papers or interim examinations, or a combination of any number or of all of these tests, as indicating the character of the work throughout the term. The maximum credit allowed for term work in such a report shall be 20 per cent. of the total marks allowed for the subject or portion of the subject in question.

2. On the acceptance of the report of the instructor, the marks given for term work are added to the marks obtained at the written examination in the subject (for which the maximum shall be 80 per cent. of the total marks allowed for the subject or portion of the subject in question), and this total shall determine the standing of the student.

3. In case the instructor submits no report, or his report is not accepted by the Board of Studies for any reason, the standing of the student is determined entirely by the final written examination, which will be valued on the basis of the total marks allowed for the subject or portion of the subject in question.

4. In any case, the award of scholarships and medals is made entirely on the results of the final written examinations.

5. The marks for term work will be reported to the student by the Registrar when the marks given for his written examination are announced, but not before.

Failures and Supplementals

1. For information regarding Matriculation failures and supplementals see pages 21 and 22.

2. An undergraduate student in Arts, Science, Engineering, Architecture or Pharmacy who has failed on any paper or papers at the December examinations may proceed with the work of the second term and may remove the condition or conditions at a supplemental examination given in April before the regular April examinations, and the mark or marks obtained at this supplemental examination will, if higher, replace the original mark or marks in computing the aggregate of the student for the year.

3. A student of the First or Second Years in Arts or Science or Senior Matriculation for Medicine or Engineering, who, at the close of the April examinations, has not more than six conditions against him, is granted standing for the year, with supplementals, provided his aggregate is at least 40 per cent. of the total maximum marks assigned to all subjects of his course.

4. In the case of examinations of the First and Second Years in Arts or Senior Matriculation for Medicine or Engineering, where the candidates are given hour-and-a-half papers in some subjects and three-hour papers in other subjects, the hour-and-a-half paper is the unit in

determining failures. A failure in a three-hour paper is reckoned as two failures, unless the examiners recommend otherwise. Students are required to pass in both the term essay work and final term examination in the subject of English Prose and Composition.

5. A student taking one of the special group courses of the Third or Fourth Years in Arts, has his standing for the year determined by the combined results of the December and April examinations (supplemental and regular). He must obtain 40 per cent. of the aggregate of the marks allowed for each *major* or *minor* subject, in order to obtain standing in that subject; and as well 40 per cent. of the aggregate of the marks allowed for all subjects of his course in order to obtain standing on the course. Having failed to obtain 40 per cent. of the aggregate of the marks in any subject, he is required to repeat all the examinations in that subject as supplemental examinations. Having failed to obtain 40 per cent. of the aggregate of the marks in all subjects of the course, or having failed to obtain the pass mark in more than three papers, he is required to repeat all the examinations of the year at the regular examinations of a subsequent session. A student who has obtained at least 40 per cent. of the aggregate of the marks in all subjects of his course, and, as well, at least 40 per cent. of the aggregate of the marks in each subject of his course, and has failures registered against him in not more than three papers of the two examinations, is granted standing but is required to take supplemental examinations in the paper or papers in which he has still failed to secure the pass mark.

6. A student taking any other special course, or the General Course of the Third or Fourth Year in Arts or the Third or Fourth Year in Science, has his standing for the year determined by the combined results of the December and April Examinations (supplemental and regular). In order to secure a pass he must obtain at least 40 per cent. of the aggregate of the marks allowed for all examinations of his course, and may not, at the close of the April examinations, have more than three conditions registered against him (a failure on an hour-and-a-half paper operating to create only a half condition.)

7. The pass mark in all undergraduate subjects in Arts is 40 per cent., both for extra-mural and intra-mural students.

8. Students in Engineering and Architecture, and in the First Year in Medicine have their standing for the year determined by the combined results of the December and April examinations. In order to secure a pass they must obtain at least 50 per cent. of the aggregate of the marks allowed for all examinations of their course. The conditions under which students will be allowed to proceed with the work of the second term, and the number of failures in individual papers that a student may make and yet be allowed standing on the combined results of the December and April examinations, with the privilege of supplementals, will be determined by the Board of Studies each year when the number of papers to be set by the examiners is definitely known.

9. Students of the Second, Third, Fourth and Fifth Years in Medicine and of all years in Law are examined only in April, and are granted standing provided they have failed in not more than two papers of the examination and have obtained at least 50 per cent. of the aggregate of the marks allowed for all papers of the examination, being required to take supplemental examinations in the papers in which they have failed.

10. The pass mark in all undergraduate subjects in Engineering and Medicine is 50 per cent. The pass mark in all professional subjects in Architecture is 50 per cent.; in other subjects 50 per cent. where they are given by the Engineering faculty and 40 per cent. where they are given by the Arts faculty.

11. The pass mark in all undergraduate subjects in Law is 40 per cent.

12. A student in Pharmacy, who, at the close of the April examinations, has, in the case of the First Year, not more than two conditions, or, in the case of the Second Year, not more than three conditions against him, is granted standing for the year, with supplementals, provided his aggregate is at least 60 per cent. of the total maximum marks assigned to all subjects of his course.

13. The pass mark in all professional subjects in Pharmacy is 60 per cent.; in the remaining subjects of the course 50 per cent.

14. The April Supplemental Examinations begin on the second Monday of the month and the September Supplemental Examinations begin on the first Thursday of the month, and run concurrently with the September Matriculation Examinations. For them, as for all other supplemental and special examinations, application should be made at least fifteen days in advance and on blank forms intended for the purpose, to be obtained from the Registrar.

15. The ordinary scale* of fees for Supplemental Examinations is as follows: One full paper (three hours), $6.00; two full papers, $7.00; three or more full papers, $8.00; one half-paper (one and a half hours), $3.00; 50 cents for each additional half-paper.

16. In all cases, students who are required to take a supplemental examination and who fail to present themselves for the same at the September examination following the regular examination at which the original failure was made, must, when they present themselves for examination at a later date, accommodate themselves to any changes in the curriculum that may have been made in the meantime.

17. A condition in any subject may also be removed by writing upon the paper provided in the subject in question at any regular examination where such paper is examined. In such a case the supplemental examination fee is required from the candidate whether or not he has paid at the same time the regular examination fee. He should also make application therefor on a special form provided for such cases by the Registrar.

18. September Supplemental Examinations are held at the University, and also at such outside centres in Manitoba, Saskatchewan, Alberta and British Columbia as the Board of Studies may from time to time approve.

Conditions of Examination

1. Candidates for any supplemental or special examination should, at least fifteen days before the date of the examination, make suitable application to the Registrar, from whom blank forms of application may be obtained. The required fee must accompany the application. The fee for a regular examination is payable (along with the tuition fee, if such is required) at the time of registration for class work.

2. (a) No student in Arts who has registered with an affiliated college shall be entitled to present himself at any regular University examination within the academic year in which he has so registered without the written consent and approval of the head or acting head of the college in which he is registered.

(b) No student in Arts who has registered only in the University shall be entitled to present himself at any regular University examination within the academic year in which he has so registered, without the written consent and approval of the Chairman of the University Faculty.

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*In the case of examinations of the First and Second Years in Arts and Science, and of Senior Matriculation, the hour-and-a-half paper is employed as the unit throughout, a three-hour paper counting as two units. $3.00 is charged for the first hour-and-a-half unit, and 50 cents for each additional hour-and-a-half unit, whether of half or full papers, up to a maximum of $8.00.

3. No one shall be permitted to present himself as an extra-mural student at any University examination in Arts above Matriculation without giving notice to the Registrar, and without receiving permission from the Board of Studies to appear as an extra-mural student.

4. Every extra-mural candidate at any examination shall, along with his application for examination, forward to the Registrar a certificate from some trustworthy person, that he is of good moral character.

Appeals

1. Any candidate is at liberty to enter an appeal, within three weeks after the publication of the examination results in the public press, against the standing assigned him by the examiners and to request a revision of the marking of one or more of his papers.

2. The fee for such revision is $2.00 for each paper. This fee is payable at the time the appeal is made, and in case the revision takes place, is not returnable, whether the original marking is sustained or not. When the revision is not granted the fee is returnable.

3. There is no special form of application for such revision.

Conditioned Students

1. Candidates for matriculation into the Faculties of Arts, Science, Law, Engineering and Architecture who have failed in not more than two papers, or, having failed in three, have at a subsequent supplemental examination, passed in at least one of them, may, as conditioned students, proceed with their course with the view of subsequently obtaining full undergraduate standing. This regulation is subject to the limitations laid down in 3 below.

2. Candidates with undergraduate standing, who have failed on not more than two papers at the First, the Second or the Third Year examinations (or at the Fourth Year Examination, in case of a five-year course), or who, having failed on more than two, have at a subsequent supplemental examination, reduced the number of their conditions to two, may as conditioned students proceed with their course with the view of subsequently obtaining full standing in their year. This regulation is subject to the limitations laid down in 3 below.

3. The following limitations are placed on the application of regulations 1 and 2 above:

(a) Matriculation conditions must be removed before the commencement of the Second Year, First Year before the commencement of the Third Year, Second Year conditions before the commencement of the Fourth Year, and Third Year conditions before the commencement of the Fifth Year.

(b) A student who, by virtue of regulations 1 and 2 above, proceeds to any examination with conditions from a previous examination still registered against him, and who at the close of the said examination has more than three conditions against him, while otherwise qualifying for a pass, will not immediately receive standing, but will have the same withheld, until, at a subsequent supplemental examination, he reduces the number of his conditions to such an extent and in such a way as to entitle him to proceed under 3 (a).

Equivalent Examinations

1. Provincial Department of Education examinations are accepted *pro tanto* by the University, in so far as the subjects and standing are, to the satisfaction of the Board of Studies, the same as, or equivalent to, those required by the University—but candidates offering certificates of having passed such examinations are required to pass in such subject or subjects not covered by their certificates, as may, in the opinion of the Board, be necessary for the completion of the examination for partial standing towards which such certificates are presented.

2. (a) The following are accepted *pro tanto* for subjects of Part I. of Arts or Science Matriculation, or Part I. of Junior Matriculation for Medicine or Engineering.

(1) Grade X. Teachers' Examination Certificate, Manitoba.
(2) Third Class Diploma, Saskatchewan, Alberta or British Columbia.
(3) Entrance to Model Schools Certificate, Ontario.

(b) The following are accepted *pro tanto* for subjects of Parts I. and II. of Arts or Science Matriculation or full Junior Matriculation for Medicine or Engineering:

(1) Grade XI. Teachers' Examination Certificate, Manitoba.
(2) Second Class Diploma, Saskatchewan, Alberta or British Columbia.
(3) Entrance to Normal Schools Certificate, Ontario.

(c) The following are accepted *pro tanto* for subjects of First Year in Arts or Science or of Senior Matriculation for Medicine or Engineering:

(1) Grade XII. Teachers' Examination Certificate, Manitoba.
(2) First Class Diploma, Saskatchewan, Alberta of British Columbia.
(3) Entrance to Faculties of Education Certificate, Ontario.

3. Provincial or Departmental Certificates for any other provinces of the Dominion are granted such *pro tanto* standing as the Board of Studies may from time to time recommend.

4. Candidates presenting *pro tanto* certificates must attempt to pass at one time in all the subjects necessary to the completion of the entire examination.

5. Holders of certificates of educational value, other than those above mentioned, receive such recognition as the Board of Studies may from time to time recommend.

6. Students of recognized colleges, who are matriculated in this University, may pursue their course of study in said college and may come up to the University examinations as students of said college.

Admission Ad Eundem Statum and Ad Eundem Gradum

Members of any other University in His Majesty's Dominions, or of any other University accredited by the University of Manitoba, who may apply for admission to this University, are not required to take the entrance Examination of the Faculty to which they belong, but may be admitted *ad eundem statum* or *ad eundem gradum*, on presentation of their credentials and payment of the required fee.

ATTENDANCE ON LECTURES AND PRACTICAL WORK.

No student who has not been duly registered as an extra-mural student, is allowed to present himself for examination in any subject in which class instruction is given, who does not present from the University Faculty, or from an affiliated college where such work is done in the college, a certificate of having attended 75 per cent. of the lectures delivered in that subject during the term preceding the examinations, in cases where December and April examinations are required, or during the entire session in cases where April examinations only are required.

No student is allowed to present himself for examination in any science subject or in mathematics unless he has satisfactorily carried out and recorded the minimum of practical work in each such subject decided upon by the University Faculty, subject to the approval of the Board of Studies; the scheme of practical work to be announced at the beginning of each session. This regulation applies to all classes of students, whether of Arts, Science, Engineering, Medicine or Pharmacy, doing practical work under the direction of the University Faculty.

Students are permitted to register for extra-mural study of any course in Arts that does not involve practical or laboratory work. The regulations with respect to time of registration, etc., are the same as for students in attendance. Such students take the same examinations as those in the regular classes of instruction of the University or affiliated colleges, and the same time-table applies. Arrangements for local supervision of examinations may be made at the discretion of the Board of Studies.

PRIZES AND SCHOLARSHIPS

The Scholarships hereinafter mentioned are provided from an endowment fund presented to the University under the terms of the will of the late Dr. A. K. Isbister.

Prizes

Prizes shall be awarded at the June examinations of each year for Part I. Matriculation to pupils of any school, not being an affiliated college, in the Province, as follows:

(a) These prizes to be called Isbister Prizes, shall be five in number of the value of $20.00 each, and shall be awarded to the five candidates standing first on the aggregate of the marks of all papers on the fixed subjects of Part I. of the Matriculation Examination for Arts, Science or Law of the University of Manitoba, or on the corresponding subjects of Part I. of the Junior Matriculation for Medicine or Engineering.

One of these prizes shall be awarded to French-speaking students. In the event, however, of no French-speaking student qualifying for a prize, all five prizes may be awarded to English-speaking candidates.

(b) The winner of each of these prizes must send in to the Registrar of the University a certificate of his having been in attendance at a public or private school, not being an affiliated college, in the Province of Manitoba, for the greater part of the preceding school year.

Scholarships

Scholarships shall be awarded to students of the University as follows:

Part II. Matriculation.

Latin and Mathematics, four scholarships, each	$60.00
English (for English-speaking candidates) two scholarships, each	40.00
French (for French-speaking candidates) one scholarship	40.00
Greek, one scholarship	30.00
French and German (for English-speaking candidates), one scholarship	30.00

**First Year, Arts.*

Latin and Mathematics, four scholarships, each	$60.00
English, two scholarships, each	40.00
Greek, one scholarship	40.00
French, one scholarship	40.00
German, one scholarship	40.00
Physics, one scholarship	40.00
History, one scholarship	20.00
Icelandic, one scholarship	20.00
Hebrew, one scholarship	20.00
Biblical Greek, one scholarship	20.00

First Year, Arts

(Latin Philosophy Course)

French-speaking candidates, one scholarship	$50.00
English-speaking candidates, one scholarship	50.00

**Second Year, Arts.*

English, Political Economy, Logic, Latin and History, four scholarships, each	$60.00
English, one scholarship	40.00
Greek, one scholarship	40.00
French, one scholarship	40.00
German, one scholarship	40.00
Hebrew, one scholarship	40.00
Biblical Greek, one scholarship	40.00
Mathematics, one scholarship	40.00
Chemistry, one scholarship	40.00
Biology (Botany and Zoology), one scholarship	40.00
Geology and Astronomy, one scholarship	40.00
Icelandic, one scholarship	20.00

Second Year, Arts.

(Latin Philosophy Course)

French-speaking candidates, one scholarship	$50.00
English-speaking candidates, one scholarship	50.00

Third Year, Arts.

At the examination of the Third Year in Arts, one scholarship of $150.00 and one of $100.00 are awarded to the students ranking first and second respectively, on the aggregate of the papers in each of the following courses: (1) General Course*; (2) Philosophy (English); (3) Philosophy (Latin); (4) Mathematics.

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* Owing to recent changes adopted in the examinations of this year the list of scholarships announced below is subject to revision. The revised list will be announced early in the First Term.

One scholarship of $100.00 are awarded to the student ranking first on the aggregate of the papers in each of the following courses: (1) Natural and Physical Science, Division A; (2) Natural and Physical Science, Division B; (3) Natural and Physical Science, Division C; (4) Natural and Physical Science, Division D; (5) Natural and Physical Science, Division E.

One scholarship of $150.00 and one of $100.00 are awarded to the students ranking first amd second respectively on the aggregate of the papers in each of the following *major* subjects: (1) Latin; (2) Greek; (3) English; (4) French; (5) German; (6) History; (7) Political Economy; (8) Hebrew.

Engineering.

At the examination of the First Year of the Civil and Electrical Engineering Course (common), a scholarship of $60.00 is awarded to the student ranking first on the aggregate of the marks on all subjects of the examination.

At the examination of the Second Year of the Civil and Electrical Engineering Course (common), a scholarship of $60.00 is awarded to the student ranking first on the aggregate of the marks on all subjects of the examination.

At the examination of the Third Year in Civil Engineering, one scholarship of $150.00 and one of $100.00 are awarded to the students ranking first and second respectively on the aggregate of the marks on all subjects of the examination.

At the examination of the Third Year in Electrical Engineering, one scholarship of $150.00 and one of $100.00 are awarded to the students ranking first and second, respectively, on the aggregate of the marks on all subjects of the examination.

Law

At the examination of the First Year of the course in Law, one scholarship of $60.00 is awarded to the student ranking first on the aggregate of the marks on all subjects of the examination.

At the examination of the Second Year of the course in Law, one scholarship of $100.00 and one of $75.00 are awarded to the students ranking first and second, respectively, on the aggregate of the marks on all subjects of the examination.

Medicine

First Year, two scholarships, each	$80.00
Second Year, two scholarships, each	80.00
Third Year, two scholarships, each	80.00
Fourth Year, two scholarships, each	80.00

Pharmacy

At the examination of the First Year of the course for the Diploma in Pharmacy, a scholarship of $60.00 is awarded to the student ranking first on the aggregate of the marks on all subjects of the examination.

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* In the award of scholarships in the General Course, all five subjects are taken into account, according to the following method: The percentage of the highest candidate in each subject shall be raised to 100, and that of each of the other candidates in proportion, and the scholarships awarded on the basis of the totals of these raised percentages.

Agriculture

At the examination of the Third Year of the degree course in Agriculture, a scholarship of $60.00 is awarded to the student ranking first on the aggregate of the marks on all subjects of the examination.

At the examination of the Fourth Year of the degree course in Agriculture, a scholarship of $100.00 is awarded to the student ranking first on the aggregate of the marks on all subjects of the course in Animal and Field Husbandry.

Home Economics

At the examination of the Third Year of the degree course in Home Economics, a scholarship of $60.00 is awarded to the student ranking first in the aggregate of the marks on all subjects of the examination.

At the examination of the Fourth Year of the degree course in Home Economics, a scholarship of $100.00 is awarded to the student ranking first on the aggregate of the marks on all subjects common to the courses in Household Art and Household Science.

GENERAL CONDITIONS OF ELIGIBILITY TO RECEIVE SCHOLARSHIPS.

1. A student is not qualified to receive a scholarship unless:—

(a) He has been ranked above all competitors on the aggregate of the marks in the subject or subjects for which the scholarship is given, or, in cases where more than one scholarship is offered, is one of a group that has been so ranked, or has become eligible through reversion (see below).

(b) He has obtained first-class standing on the aggregate of the marks in the subject or subjects for which the scholarship is given;

(c) And has passed at the same examination* in all the subjects required for the full work of the academic year in which the scholarship is given;

(d) And has removed at the same† examination, or prior to it, any condition from a previous year or grade that may have been registered against him.

2. No student may hold more than one scholarship. If a student succeeds in otherwise qualifying for more than one scholarship in any year, he will be allowed to receive but one, and his name will be entered upon the list as having qualified for the other, though not entitled to any of the funds, and such other scholarship will be granted to the one ranking next to him, provided he is otherwise eligible.

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* A failure or failures on December examinations in undergraduate subjects of the First or Second Years in Arts, on which supplemental examinations are successfully passed in April, will not operate to debar the student concerned from receiving a scholarship, should he otherwise qualify, unless the subject in which the failure occurs be one of the group on which the scholarship is awarded. A failure or failures on December Examinations in subjects of the First or Second Year in Engineering, on which supplemental examinations are subsequently passed in April, will not operate to debar the student concerned from receiving a scholarship, should he otherwise qualify. In the Third and Fourth Years in Arts or Engineering a failure on a December examination in any subject of the year, will operate to debar the student concerned from receiving a scholarship on that year's work, even if a supplemental examination in the subject in question is later successfully passed.

† In the case of a student writing on a First Year examination while a Matriculation condition still stands against him, "the same examination" is understood to include the June Matriculation examination immediately following the session during which his First Year Examination is taken.

3. A student is not qualified to receive an Isbister prize at the examination of Part I. Matriculation unless—

(a) He has obtained first-class standing on the aggregate of the subjects for which the prize is given;

(b) And has passed at the same examination in all subjects required for the full examination of Part I. Matriculation.

CONDITIONS GOVERNING THE PAYMENT OF SCHOLARSHIPS

The general conditions governing the payment of these scholarships are determined by the terms of the will under which the trust was established, from which the following is an excerpt:

> "I desire it to be understood that I establish this trust for the benefit and improvement of education in the Province of Manitoba, and it is my wish that it shall take the form of a general scholarship or prize fund for the encouragement of meritorious students and scholars in the various places of education in the Province for both sexes, from the Common School to the Colleges and Institutions and Private Schools where the highest education is given without any distinction of race, creed, language or nationality. In the Lower Schools this encouragement may take the form of prizes, and in the Higher Schools that of scholarships of sufficient value to maintain or help to maintain the holder at a College or University either in Canada, Great Britain or elsewhere, and I leave the Governing Body of the Manitoba University free to carry out the objects of the trusts now confided to them in the manner which to them may seem best."

The scholarships are paid during the course of the annual session following that at the examinations of which they were won, provided the winners are duly enrolled and regularly in attendance at the University or an affiliated college, upon the full work of the next succeeding year of the degree course they have begun, and payment is made upon the following plan: One moiety on the second Monday in November and one moiety on the second Monday in February, upon receipt by the Bursar of certification as to the award of the scholarship and as to compliance with the above requirements of registration and attendance from the Registrar and the President in the case of students registered for instruction in the University, and from the Registrar of the University and the head of the College in question in the case of students registered for instruction in an affiliated college.

If, for any reason, the winner of a scholarship is not in attendance as an intra-mural student during the academic year next following that in which the scholarship is won, the scholarship will automatically be extended for another year.

If, for any reason, the winner of a scholarship is not in attendance during the two academic years next following that in which the scholarship is won, the scholarship will lapse.

The values stated for the scholarships are the maximum values which the scholarships will not exceed. If the funds do not allow of the scholarships being of such maximum value, then they shall be proportionately of such value as the funds will allow.

TRAVELLING SCHOLARSHIP

The sum of $600.00 is given annually for the maintenance of a Travelling Scholarship, to be awarded under the following conditions:—

1. The object of the Travelling Scholarship is to assist students who have completed their Final Year in the University to pursue the special line of studies which they have selected, at some other University or seat of learning.

2. No student may hold a Travelling Scholarship for a longer period than two years; and no student who has once held such a scholarship may be eligible a second time.

3. Those eligible to compete for the scholarship are students who have graduated not more than twelve months previously, at the regular spring examination, in one of the special courses in Arts, or in the course in Medicine or Engineering.

4. One Travelling Scholarship is offered for competition in every alternate year, or oftener if a scholarship be vacant; and the course in which it is offered is decided by rotation in the following order:—The special course in Classics, the special course in Mathematics, the special course in Modern Languages, the special course in English Philosophy, the special course in Latin Philosophy, the special courses in Science, the course in Medicine, the courses in Engineering.

The course in which it is proposed to award it shall be announced in the Calendar of the year previous.

5. The scholarship is awarded to the student obtaining the highest marks at a special examination in the subjects of the selected course, the date and place of holding which is announced in the Calendar of the year previous; provided always that the scholarship shall not be awarded to any student who shall not have (a) obtained first class standing at the special examination, and (b) obtained first class standing and have passed in all subjects of his final examination. If these conditions be not satisfied the scholarship may, if the Board of Studies deem it advisable, be offered under similar conditions in the subjects of the course next in rotation.

6. The place at which the successful student shall pursue his studies shall be selected by the student, subject to the approval of the Board of Studies.

7. The scholarship is of the yearly value of $600.00, and the amount is paid each year in two moieties; provided that the second moiety in each year shall not be paid until the student shall have spent at least three months in studying at the institution selected, and shall have produced a certificate from the authorities of the institution of his having made satisfactory progress.

A special Travelling Scholarship Examination is held in June, at a date announced by the Registrar. Applications for this examination should be forwarded to the Registrar thirty days in advance.

The scholarship will be open for competition in the year 1921 to students who have graduated in that year or the previous year in Medicine.

THE RHODES SCHOLARSHIP

By the will of the late Mr. Cecil Rhodes, a scholarship of the value of £300 yearly, tenable at any college in the University of Oxford for three consecutive academical years, has been allotted to the Province of Manitoba. Nominations to the scholarship are made by a committee of five, named by the Council of the University of Manitoba, and one appointment is under normal conditions made by the trustees in each year.

The award of these scholarships has been suspended on account of the war and accordingly in September, 1919, two nominations will be made, viz., those for 1918 and 1919.

The following information as to the requirements and procedure in connection with appointments to Rhodes scholarships, as hitherto prevailing, is appended:

In order to be eligible for nomination to this scholarship, candidates—

(a) Must be British subjects, with at least five years' domicile in Canada, and unmarried.

(b) Must have spent four years in Manitoba educational institutions, two at least of which must have been as registered undergraduates of the University of Manitoba.

(c) Must have passed their nineteenth, but not have passed their twenty-fifth birthday, on October 1st of the year for which they are elected.

The University of Manitoba has been admitted by the University of Oxford to the privileges of the Statute on Colonial and Indian Universities. This statute relieves its students of a certain standing from the requirements of Responsions (the first public examination exacted by the University of Oxford from each candidate for a degree), providing a sufficient knowledge of the Greek language has been shown. It also admits to Junior or Senior status, as follows:—

(a) Any member of a University so admitted, who shall have pursued a course of study prescribed by it and extending over two years, and who shall have passed all the examinations incident to the course, may be admitted to the status and privileges of a Junior Colonial or Indian Student.

(b) Any member of a University so admitted, who shall have pursued a course of study prescribed by it and extending over three full years, and who shall have taken honors in the final examination incident to the course, may be admitted to the status and privileges of a Senior Colonial or Indian Student.

Candidates for the scholarship, therefore, who have satisfied the condition of eligibility which requires a record of at least two years of undergraduate work in the University of Manitoba, are relieved of the necessity of passing a preliminary or qualifying examination, provided they hold standing in Greek equivalent at least to that of the Second Year in Arts.

If the University of Manitoba did not enjoy this privilege under the Statute on Colonial and Indian Universities, or if the two years of undergraduate work of the prospective candidate were not sufficient to relieve him from Responsions, a qualifying examination would be held prior to the election.

This examination is not competitive, but is intended to give assurance that all candidates are fully qualified to enter on a course of study at Oxford University. It is therefore based on the requirements for Responsions. Rhodes scholars may be selected from candidates who have successfully passed this preliminary examination.

Candidates must offer the following:—

(1) Arithmetic—the whole.

(2) Either Algebra—

Addition, Subtraction, Multiplication, Division, Greatest Common Measure, Least Common Multiple, Fractions, Extraction of Square Root, Simple Equations containing one or two unknown quantities, and problems producing such equations.

All the Elements of Geometry—

Elementary Questions, including propositions enunciated by Euclid, and easy deductions therefrom, will be set on the subject-matter contained in the following portions of Euclid's Elements, viz.:—

Book I.—The whole, excluding propositions 7, 16, 17, 21.
Book II.—The whole, excluding proposition 8
Book III.—The whole, excluding propositions 2, 4 to 10, 13, 23, 24, 26 to 29

Any method of proof will be accepted which shows clearness and accuracy in geometrical reasoning. So far as possible, candidates should aim at making the proof of any proposition complete in itself. In the case of propositions 1 to 7, 9, 10 of Book II., algebraical proofs will be allowed.

(2) Greek and Latin Grammar.

(3) Translation from English into Latin prose.

(4) Greek and Latin Authors.

Candidates must offer two books, one Greek and one Latin or Unseen Translation. The following portions of the undermentioned authors will be accepted:—

Demosthenes—De Corona.
Euripides—Any two of the following plays: Hecuba, Medea, Alcestis, Bacchae.
Homer—(1) Iliad 1—5, or 2—6; or (2) Odyssey 1—5, or 2—6.
Plato—Apology and Crito.
Sophocles—Antigone and Ajax.
Xenophon—Anabasis—1—4, or 2—5.
Caesar—De Bello Gallico, 1—4.
Cicero—(1) the first two Phillippic Orations; or (2) the first three Catiline Orations, and In Verrem, Act. I; or (3) the Orations. Pro Murena and Pro Lege Manilia; or (4) the treatises, De Senectute and De Amicitia.
Horace—(1) Odes i—4; or (2) Satires; or (3) Epistles.
Livy—Books V. VI.
Vergil—(1) the Bucolics, with Books 1—3 of the Aeneid; or (2) the Georgics; or (3) the Aeneid, Books 1—5, or 2—6.

The texts used in setting the examination papers will be those of the Series of Oxford Classical Texts, so far as these have been published by the Oxford University Press.

Papers covering this range of study will be prepared by examiners appointed by the Trustees, and will be sent to each centre, where required, and at a date publicly announced, the examination will be held under proper supervision, and the papers returned to the examiners. A list of those who have successfully passed this test will, as soon as possible, be furnished the Committee of Selection, and from this list, and a list of other eligible candidates, the Committee will proceed to elect the scholar.

Candidates for the scholarship should, during the month of December, notify the Secretary of the Committee of Selection of their intention of becoming such candidates, forwarding at the same time a detailed statement of their record, proof of all matters necessary to establish their eligibility, and a list of references with whom the Committee of Selection may communicate respecting their fitness for appointment. The decision of the Committee of Selection is final.

The following extract from the will of the late Right Hon. Cecil John Rhodes serves to indicate some of the considerations taken into account in elections to this scholarship:

> "My desire being that the students who shall be elected to the scholarships shall not be merely bookworms, I direct that in the election of a student to a scholarship regard shall be had to (1) his literary and scholastic attainments; (2) his fondness of and success in manly outdoor sports, such as cricket, football and the like; (3) his qualities of manhood, truth, courage, devotion to duty, sympathy for and protection of the weak, kindliness, unselfishness and fellowship; and (4) his exhibition during school days of moral force of character and of instincts to lead and to take an interest in his schoolmates; for those latter attributes will be likely in after life to guide him to esteem the performance of public duties as his highest aim. As mere suggestions for the guidance of those who will have the choice of students for the scholarships, I record that (1) my ideal qualified student would combine these four qualifications in the proportions of three-tenths for the first, two-tenths for the second, three-tenths for the third, and two-tenths for the fourth qualifications, so that according to my ideas, if the maximum number of marks for any scholarship were 200, they would be apportioned as follows: 60 to each of the first and third qualifications and 40 to each of the second and fourth qualifications; (2) the marks of the several qualifications would be awarded independently as follows (that is to say) the marks for the first qualification by examination, for the second and third qualification respectively by ballot by the fellow-students of the candidates, and for the fourth qualification by the head master of the candidate's school; and (3) the results of the awards (that is to say, the marks obtained by each candidate for each qualification) would be sent as soon as possible for consideration to the trustees or to some person or persons appointed to receive the same, and the person or persons so appointed would ascertain by averaging the marks in blocks of 20 marks each of all candidates the best ideal qualified students."

No student shall be qualified or disqualified for election to scholarship on account of his race or religious opinions.

The Committee of Selection is asked to furnish to the Trustees as full a statement as possible of the school and college career of each elected scholar, with the special grounds of his appointment, together with suggestions, if desired, as to the course of study for which he is best fitted.

A qualified student who has been elected as aforesaid shall within six calendar months after his election, or as soon thereafter as he can be admitted into residence, or within such extended time as the Trustees shall allow, commence residence as an undergraduate at some college in the University of Oxford. The scholarship is payable to him from the time when he commences such residence.

Any inquiries about Oxford, its colleges and the courses of study there, should be addressed to F. J. Wylie, Esq., the Oxford agent of the Rhodes Trustees.

Copies of Oxford Responsion papers for past years can be obtained from the Copp, Clark Company, Toronto. The Student's Handbook of Oxford can be ordered at the same address. It gives full information about the examinations of the University, subject to changes made since the last edition was issued. "Oxford As It Is," a small pamphlet prepared by Mr. Louis Dyer, of Harvard and Balliol Colleges, for the use of American candidates, gives all essential information in a condensed form. It can also be ordered from the Copp, Clark Company, Toronto. "Oxford and Its Colleges," written by Mr. J. Wells, of Wadham College, and "Oxford and Oxford Life," edited by the same gentleman, may be recommended to those who wish to gain full information about the University and its Colleges.

PRIZES IN MEDICINE

Two microscopes, known as "The Chown Prizes in Medicine," the gift of the Faculty of Manitoba Medical College, are awarded each year to the two students of the Fifth Year in Medicine who have obtained the highest standing in Medicine and in Surgery respectively, of the Fourth and Fifth Years. Both theoretical and clinical examinations are taken into account.

The Medical Registrar and the Surgical Registrar of Winnipeg General Hospital give prizes to the students of the Fifth Year presenting the best medical case reports, and the best surgical case reports, respectively, based on their hospital work.

MEDALS

(a) The Governor-General's Medal.

The Governor-General's *Gold Medal*, the gift of his Royal Highness the Governor-General is awarded annually to the student of the Third Year in Arts ranking highest on the aggregate of the examinations of the full course of the first three years in Arts.

(b) University Medals.

A *Gold Medal* is awarded annually to the student standing first in order of merit at the final examination of each of the following courses or subjects in Arts, provided his standing on the aggregate of the marks be 80 per cent. or above: *General Course; Philosophy (English); Philosophy (Latin); Mathematics; Natural and Physical Science; Greek major; Latin major; Hebrew major; English major; French major; German major; History major; Political Economy major.

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*In the award of the medal in the General Course, all five subjects shall be taken into account, according to the following method: The percentage of the highest candidate in each subject shall be raised to 100, and that of each of the other candidates in proportion, and the medal awarded on the basis of these raised percentages.

Gold Medals are awarded annually to the students standing first in order of merit at the final examinations in Civil Engineering and in Electrical Engineering, provided their standing on the aggregate of the marks be 80 per cent. or above.

A *Gold Medal* is awarded annually to the student standing first in order of merit in the final examination of the course in Medicine, provided his standing on the aggregate of the marks be 80 per cent. or above.

A *Gold Medal* is awarded annually to the student standing first in the order of merit in the final examination of the course in Law, provided his standing on the aggregate of the marks be 80 per cent. or above.

(c) Special Medals.

A *Gold Medal*, presented by Mr. J. Lonsdale Doupe, in memory of his father, Mr. Joseph Doupe, is awarded annually to the student obtaining the highest first-class standing on the Third and Fourth Year Examinations of the course in Civil Engineering.

A *Gold Medal*, presented by Dr. J. N. Hutchison, is awarded annually to the student obtaining the highest first-class standing on the aggregate marks of the full course in Medicine.

A Gold Medal, presented by Dr. Edith M. Ross, in memory of her grandmother, Dr. Charlotte W. Ross, is awarded annually to the student of the Fifth Year in Medicine obtaining the highest standing in Obstetrics and Pediatrics of the Fourth and Fifth Years.

DEGREES IN ABSENTIA

No degree will be conferred *in absentia* except where good reasons for absence have been submitted to, and approved by the Board of Studies, or the Council, and an additional fee of ten dollar may be exacted in each case where permission is granted.

GRADING OF DEGREES

All degree diplomas granted by the University are graded as follows: *rite*, indicating standing between the pass mark and 66 per cent. inclusive; *cum laude*, indicating standing between 67 per cent. and 79 per cent., inclusive; *magna cum laude*, indicating standing of 80 per cent. and above.

UNIVERSITY DRESS

No undergraduate student shall present himself at any University Examination, or at any meeting of the University, unless he be clothed in the academic dress peculiar to his college.

The materials and colors prescribed by the Council for the hoods to be worn by graduates of the University are as follows:

B.A.—Black stuff, edged with white rabbit skin, with a braid of green silk.

M.A.—Black corded silk, lined with scarlet corded silk.

M.D.—Black cashmere, lined with purple corded silk.

M.D., C.M.—Black cashmere, lined with purple corded silk and edged with violet silk.

LL.B.—Black silk stuff, lined with white silk, edged with narrow white rabbit skin, and narrow green silk braid along the border

B.S.A—Black, lined with green, and edged with white rabbit-skin.
B.H.Ec.—To be determined.
Phm.B.—Black, lined with light blue and edged with white rabbit-skin.
B.C.E.—Black, lined with yellow and edged with white rabbit-skin.
M.C.E.—Black, lined with yellow.
B.E.E.—Black, lined with yellow and edged with white rabbit-skin.
M.E.E.—Black, lined with yellow.
B.M.E.—Black, lined with yellow and edged with white rabbit skin.
B.Sc.—Black, lined with gold yellow and edged with white rabbit skin.
LL.D.—Scarlet cloth lined with white moire silk.

FEES.

The following fees are required and must be paid to the Registrar of the University in advance. Regular Examination fees are payable at the time of registration, degree fees fifteen days in advance of the opening of the final examination. Supplemental examination fees are payable at the time application for the examination is made. The fees for admission *ad eundem statum* or *ad eundem gradum* are payable at the time application therefor is made. Tuition fees in Medical Subjets are paid to Manitoba Medical College.

Matriculation Examinations.

For Matriculation (Part I.)	$ 3.00
For Matriculation (Part II.)	4.00
For Matriculation (Parts I. and II.)	6 00
For Matriculation by subjects, each subject	2.00
For Part I. Matriculation Supplemental Examination—	
One subject	$ 2.00
Two or more subjects	3.00
For Part II. Matriculation Supplemental Examination—	
One subject	$ 6.00
Two subjects	7.00
Three subjects	8.00

This scale of fees applies to the September examinations only. The June Matriculation Examination fees are payable to the Department of Education, and are on a scale fixed by the Department.

Examinations Above Matriculation.

For each Regular Annual Examination (payable at the time registration for the year's work is made).	$ 8 00
For each Supplemental Examination*—	
One subject	$ 6.00
Two subjects	7.00
Three subjects	8.00
Examination for License to Practise Medicine	15.00

Registration

Registration (payable the first time a student registers in any Faculty)	$ 2.00

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* For further details see page 142.

Tuition

For Arts and Science Students—	
A full course, any year	$36.00
A single subject (without laboratory work) (First and Second Years or General Course Third and Fourth Years)	8.00
A single subject as above, with laboratory work	10.00
A major subject, Third and Fourth Years	18.00
A minor subject, Third and Fourth Years	9.00
Extension Course in English Literature or Political Economy	5.00
For Students in Engineering and Architecture—	
First Year	$55.00
Second Year	65.00
Third Year, any course	80.00
Fourth Year, any course	80.00

(The tuition fee of each special student is determined by the Registrar, after consultation with the Professor in whose department the student receives instruction.)

Degrees.

For the Degree of B.A.	$10.00
For the Degree of M.A.	10.00
For the Degree of LL.B.	10.00
For the Degree of Phm.B.	10.00
For the Degree of M.D.	10.00
For the Degree of C.M.	15.00
For the Degree of B.C.E.	10.00
For the Degree of B.E.E.	10.00
For the Degree of M.C.E.	20.00
For the Degree of M.E.E.	20.00
For the Degree of B.Sc.	10.00
For the Degree of B.S.A.	10.00
For the Degree of B.H.Ec.	10.00
For the conferring of any Degree *in absentia* (for which the consent of the Board of Studies or the University Council must be secured), an additional fee of	10.00
For admission *ad eundem statum*	5.00
For admission *ad eundem gradum*	10.00

Appeals

Each paper	2.00

Special

For a Certificate of Standing	$ 2.00
For a Statement of Marks, on request	1.00
For a Complete Bound Set of Examination Papers	.50

Caution Money

Arts students in the special courses in Mathematics and Natural and Physical Science, Science students and students in Engineering and Architecture, and all others taking practical or laboratory classes in the University, are required to deposit with the Registrar at the beginning of each session the sum of $5.00. Against this will be assessed the value of all apparatus broken or materials wasted in any way other than in the legitimate course of class work, and the balance will be refunded at the close of the term. All other students make a caution money deposit of $2.00.

APPENDIX I.

REGULATIONS OF THE COLLEGE OF PHYSICIANS AND SURGEONS OF MANITOBA.

Regulations Regarding License to Practice Medicine in Manitoba.

The College of Physicians and Surgeons, which is composed of all the medical practitioners whose names are duly entered on the Manitoba Medical Register, is neither a teaching nor an examining body, but is the sole licensing body in medicine in the Province. The University of Manitoba is the sole examining body.

If the applicant for license be a graduate in medicine of the University of Manitoba a license to practice in the Province is granted without further examination by paying the license fee of $125.

If the applicant for a license be a graduate in medicine of any other Canadian University, he must send to the Registrar of the College of Physicians and Surgeons, prior to the 1st of March, his medical degree (as a credential), and upon this being found satisfactory he shall be reported to the University as eligible to write at the regular examination, which is held once a year, beginning on the third Monday in April. A five-year medical course is now required.

The diploma of the Medical Council of Canada entitles to registration with the College of Physicians and Surgeons of Manitoba, without further examination upon payment of the regular license fee.

In the case of a graduate from any University in the United States or other foreign country, he shall, in addition to sending his degree (or diploma), be required to send complete detailed and authoritative information as follows:

First.—As to his matriculation; giving the name and address of the institution in which he was examined, the subjects, and the extent of each required.

Second.—As to medical course; the number and length of sessions, subjects taught, number of courses in each, and number of lectures in each course, amount of clinical instruction in the different courses, etc., etc.

All candidates writing for licence must show that the course of studies of such college or other incorporated body, at the time such member was admitted thereto, was at least equivalent to the requirements for a similar course by the University of Manitoba at the time such member shall seek to be registered as aforesaid.

On receipt of this information the College of Physicians and Surgeons will decide as to the eligibility or otherwise of the applicant to write for license.

Each applicant, at the same time that he sends his credentials to the Registrar of the College of Physicians and Surgeons, should send $15, examination fee, in a separate communication addressed to the Registrar of the University, which will be returned to him in case he is not permitted to write.

A candidate failing in three or more subjects must write on the whole examination again, and can only do so at a subsequent regular spring examination. If he fail in two subjects, or less, he will be required to write on these only, and may do so at the time of the Supplemental Examinations, which begin on the second Thursday in September, or at any subsequent regular examination.

The subjects of examination for license are: Medicine, Surgery, Obstetrics, Diseases of Children, Gynaecology, Materia Medica and Therapeutics, Clinical Medicine, Clinical Surgery, Clinical Ophthalmology, Otology, and Laryngology. Fifty per cent. is required in each to pass.

The fee for license, $125.00, is payable to the Registrar of the College of Physicians and Surgeons immediately after the receipt by him from the University of a satisfactory report of the candidate's examination.

No interim permit to practice is granted.

Licentiates in Great Britain, in good standing, may register in Manitoba on presenting the British certificate of registration and evidence that they have obtained this standing by examination, and on paying the registration fee, $125.00.

J. E. COULTER, M.D., C.M.,
Registrar, College of Physicians and Surgeons of Manitoba
604 Boyd Building, Winnipeg.

APPENDIX II.

THE UNIVERSITY LIBRARY

Frank Emmett Nuttall, M.A., Librarian.

The main library occupies the large room in the old Law Courts which formerly contained the library of the Law Society. The total number of volumes may be estimated at 16,000, and the annual accessions are from 1,500 to 2,000 volumes. The nucleus of the collection was that portion of the Isbister library which escaped destruction by fire, but the greater part of it has been acquired during the past eight years by purchase or by gift.

Among noteworthy donors are Sir Lauder Brunton, who gave 600 volumes from his private library; the Royal Society of Medicine; Professor Crawford; the Royal Society of London, who gave a number of volumes which almost complete a set of the Proceedings of the Royal Society; His Majesty's Government, who gave a large number of the Geological Survey Memoirs of Great Britain; the British Association for the Advancement of Science, who presented 721 books and 150 pamphlets to commemorate their visit to Winnipeg in 1909; and the Smithsonian Institution, Washington.

Two hundred and twenty-five journals and periodicals are at present received in the Library, of which thirty-one are presented. The list is as follows:

Agricultural Gazette of Canada
American Architect
American Economic Review
American Historical Review
American Journal of Anatomy
American Journal of Archaeology
American Journal of International Law
American Journal of Mathematics
American Journal of Philology
American Journal of Physiology
American Journal of Science
American Journal of Semitic Languages and Literature
American Mathematical Monthly
American Museum Journal
Annales de Chimie
Annales de Physique
Annals of Botany
Annals of Mathematics
Architectural Forum
Architectural Record
Architectural Review
Architecture
Archives Italiennes de Biologie
Art and Archaeology
Astronomical Journal
Astrophysical Journal
Athenæum
Atlantic Monthly

Bankers Magazine (American)
Bankers Magazine (English)
Better Roads and Streets
Biblical World
Bibliographie Scientifique Française
Biometrika
Blackwood's Edinburgh Magazine
Bookman (American)
Bookman (English)
Bookseller and Stationer
Botanical Gazette
Brain
Brandon Weekly Sun
Bulletin of American Mathematical Society
Bulletin Astronomique

Bulletin of Bureau of Standards
Bulletin of Geological Society of America
Bulletin de la Societe Chimique de France

Canadian Engineer
Canadian Finance
Canadian Magazine
Canadian Mining Journal
Canadian Municipal Journal
Canadian Railway and Marine World
Century
Chemical News
Classical Journal
Classcal Philology
Classical Quarterly
Classical Review
Comptes rendus de l'Academie des Sciences
Comptes rendus de la Societe de Biologie
Concrete and Constructional Engineering
Conservation
Conservation of Life
Construction
Contemporary Review
Contract Record
Country Life

Department of Interior (U.S.A.)Bureau of Education Bulletin
Department of Trade and Commerce (Canada) Census and Statistics Monthly
Department of Trade and Commerce (Canada) Weekly Bulletin
Dial
Drama

Economic Geology
Economist
Educational Review
Electric Journal
Electric Railway Journal
Electrical Experimenter
Electrical News
Electrical Review and Western Electrician
Electrical World
Electrician
Endocrinology
Engineer
Engineering
Engineering and Contracting
Engineering Index
Engineering and Mining Journal
Engineering News and Record
English Historical Review
English Review
Eugenics Review

Farmer's Advocate
Farmer's Telegram
Fortnightly Review

Gazetta Chimica Italiana
General Electric Review
Geographical Journal
Geological Magazine
Good Furniture

Harper's Magazine
Hibbert Journal
Highway
House and Garden

Industrial Management
International Journal of Ethics
International Studio

Journal of Agricultural Research
Journal of Biological Chemistry
Journal of the Chemical Society
Journal des Economistes
Journal of the Engineers' Club of St. Louis
Journal of English and Germanic Philology
Journal of Geology
Journal of Hygiene
Journal of Immunology
Journal of Infectious Diseases
Journal of the Institute of Actuaries
Journal of the Institute of Bankers
Journal of the Institute of Electrical Engineering
Journal of the Iron and Steel Institute
Journal de Mathematiques Pures et Appliquees
Journal of the New England Water Works Association
Journal of Pathology and Bacteriology
Journal of Physical Chemistry
Journal de Physiologie et de Pathologie Generale
Journal of Physiology
Journal de Physique
Journal of Political Economy
Journal of the Royal Astronomical Society of Canada
Journal of the Royal Institute of British Architects
Journal of the Royal Microscopical Society
Journal of Urology
Journal of the Western Society of Engineers

Labour Gazette
Lancet (2 copies)

Manitoba Free Press
Manitoba Gazette
Manitoban
Manitoba Public Service Bulletin
Mathematical Gazette
Memoirs of the Department of Agriculture in India
Messenger of Mathematics
Metallurgical and Chemical Engineering
Mind
Modern Language Notes
Modern Language Review
Modern Philology
Monthly Notices of the Royal Astronomical Society
Monthly Report of the Department of Trade and Commerce of Canada
Municipal Engineering

Nation (New York)
Nature
New Europe
New Phytologist
New York Times
New York Times Index (quarterly)
New York Times Current History
Nineteenth Century and After
Notes and Queries
Nouvelles Annales de Mathematiques
Nuovo Cimen

Observatory

Palestine Exploration Fund. Quarterly Statement
Philosophical Magazine
Philosophical Transactions of the Royal Society
Physical Review
Physical Society of London: Proceedings

Physiological Abstracts
Poet Lore
Political Science Quarterly
Polytechnic
Polytechnic Magazine
Popular Astronomy
Proceedings of the Academy of Political Science
Proceedings of the American Institute of Electrical Engineers
Proceedings of the Institute of Radio-Engineers
Proceedings of the London Mathematical Society
Proceedings of the National Academy of Sciences of U. S. A
Proceedings of the Royal Society
Proceedings of the Royal Society of Edinburgh
Proceedings of the Zoological Society

Quarterly Journal of Economics
Quarterly Journal of Experimental Physiology
Quarterly Journal of the Geological Society
Quarterly Journal of Mathematics
Quarterly Journal of Microscopical Science
Quarterly Journal of the Royal Meteorological Society
Quarterly Journal of the University of N. Dakota
Quarterly Review
Queen's Quarterly

Railway Age Gazette
Review of Applied Entomology
Revue des Deux-Mondes
Revue Generale de l'Electricite
Revue Historique
Rhodora
Round Table
Russia

Science
Science Abstracts—Sec. A—Physics
Scientia
Scientific Monthly
Spectator
Statist

Telephone Engineer
Times (London) (daily)
Times Educational Supplement
Times Literary Supplement
Times Official Index (quarterly)
Transactions of the Actuarial Society of America
Transactions of the American Association of Civil Engineers
Transactions of the American Mathematical Society
Transactions of the Illuminating Engineering Society
Transactions of the Institute of Electrical Engineering
Transactions of the Royal Society of Canada
Transactions of the Zoological Society
Twentieth Century Russia

United Empire
University Magazine

War and Peace

Yale Review

Zoologica

APPENDIX III.

DEGREES GRANTED IN 1918-19.

October 3rd, 1918

Bachelor of Arts

Mihaychuk, Manuel

Diploma in Pharmacy

Elik, Isaac S.
Harman, Reginald L.

December 3rd, 1918

Bachelor of Laws

Currie, William Gordon
Ellor, Percy
Griffin, Aylmer

Bachelor of Science in Agriculture

Brander, James John

March 20th, 1919

Bachelor of Arts
(ad eundem gradum)

Snyder, Joseph Hebard (Columbia University)

May 23rd, 1919

Bachelor of Arts

Abrahamson, Esther
Adams, Emily Isabel
Adamson, Ora
Annis, Jean
Armstrong, William Ewart
Barbour, Harold Douglas
Bell, Nora Ellen
Bone, John Tregurtha
Brownstone, Rowena
Bucknam, Hazel
Bulman, Bessie Frances Lilian
Carey, Harold Eric
Chapman, Daryl Rayworth
Conolly, N. Kathleen
Couture, Eugene
Cummings, Arthur Stewart
Dick, Clifford Allan
Driscoll, Frederick MacLeod
Edwards, John Angus Manley
Foreman, Louise Anne
Garner, William
Gibb, Douglas Forfar
Graham, Jean Lorraine
Gray, Edith Margaret
Greer, Edna Hazel
Harvey, Howard Graham
Ibbetson, Percy Victor
Johnston, Edna Ruth
Loadman, Frank Ivan
Long, Janet Evelyn
Macleod, Marjorie Kathleen
Margolis, Sarah
Maybank, Harold Ralph
McRae, Luella
Muller, Louis François
Nichols, Wilma Dorothy
Ridd, John Elwood
Rundle, Florence Marjorie
Runions, Wesley Douglas Gourlay
Smith, John Wilfrid
Stuart, Gerald Lea
Travis, Corra May
Wackenroder, Henry Frederick
Warters, Winnifred Mary
Zaharychuk, Andrew

Bachelor of Arts
(Ad eundem gradum)

McIntyre, Campbell Mabee, B.A., McMaster University

Bachelor of Science

Bulman, Eileen Minnie, B.A.
Gowanlock, James Nelson, B.A.
Shewell, Gertrude Morland
Sweet, Arthur Henry
Thompson, Lucas Gilbert

Bachelor of Laws

Bissett, John Edwin
Collins, Franklin Kay, B.A.
Doerr, Harry Augustus
Gordon, William
Kopstein, Maxwell Eul
Leavitt, William Wolfe
Lindal, Jorun Hinrikson, B.A.,
Lindal, Walter Jacobson, B.A.
McArthur, Clarence Victor, B.A.
Otis, Lawrence LeRoy
Read, Frederick

Reynolds, William Clifford
Richardson, Walter Cooper
Russell, Francis Joseph
Turner, Frederick James

Doctor of Medicine

Alexander, Edward Hart
Arnason, Jon Skuta, B.A.
Beaton, Wesley Grant
Backman, Kristjan Jens
Black, Robert
Blair, Alexander Kenneth
Creighton, Dalton Arthur
Dicks, Royal Edwin
Elder, George Gordon
Good, John Ralph
Granofsky, Sophie Antoinette
Henderson, Randolph Churchill
Herbert, Stanley Gordon
Hossack, John Cruickshank
Johnston, Thomas Henry
Keyes, William James Arnold
Kraminsky, Samson
Matheson, Henry Angus
McCallum, Donald
McColgan, James Wellington
MacKinnon, Alexander Garland
Morrow, James Moore
Nicholson, Daniel
Rogers, Lawrence Morrison
Seale, Carl William Edward
Sommerville, Andrew Neville
Taylor, Ellen Fraser
Thorlaksson, Paul Henry Thorbjorn
Winchell, Earl Dickson
Woodside, Harold Anson

Master of Surgery

Arnason, Jon Skuta, B.A.
Beaton, Wesley Grant
Hossack, John Cruickshank
Matheson, Henry Angus
Nicholson, Daniel
Rogers, Lawrence Morrison
Thorlaksson, Paul Henry Thorbjorn
Winchell, Earl Dickson

Bachelor of Architecture

Corrigill, Alexander Stevenson

Diploma in Pharmacy

Corbett, Sarah Emma
Eaton, Blake Scott
Fondaminsky, Isreal
Lightbody, William
Ruttan, Henry Carman

Bachelor of Home Economics

Armstrong, Ethel
Henry, Gladys Marie
Moore, Evelyn
Speechley, Margaret Mary

Bachelor of Science in Agriculture

Cox, John Alvin
Hayter, Ernest Sidney
Heise, Russell Edwin
MacWilliam, Alexander
Stratton, Arthur Kendal
Tolton, James Harvey

Master of Arts

Allison, David, B.A., University of Manitoba, 1916. Major: "Advanced Inorganic Chemistry." Minor: Allowed for instructional work. Thesis: "The Boiling Point Method as a Means of Determining Molecular Weights."

Goodwin, John Francis, B.A., University of Manitoba, 1917. Major: English. Minor: French. Thesis: "Milton and the Drama."

McCrea, Roland Lawrence, B.A., University of Manitoba, 1918. Major: Economics. Minor: Political Science. Thesis: "Provincial and Municipal Taxation in Saskatchewan."

Miller, Charles Samuel, B.A., University of Manitoba, 1911. Major: New Testament Greek. Minor: Apocrypha. Thesis: "The Apocalypse—Its Sources and Content."

Sharples, Harold Richard, B.A., University of Manitoba, 1917. Major: Modern English. Minor: Middle English. Thesis: "The Puritan Element in the Works of John Milton."

Shortliffe, Delbert Llewellyn, B.A., University of Manitoba, 1916. Major: Mathematics. Minor: Astronomy. Thesis: "Riemann Surfaces."

Somerset, Marjorie, B.A., University of Manitoba, 1915. Major: Modern English. Minor: Old and Middle English. Thesis:

"John Keats and his Relation to Shelley and other Romantic Poets."

Szkwarok, George, B.A., University of Manitoba, 1915. Major: Political Economy. Minor: Political Science. Thesis: "Critical Commentary on Marshall's Principles of Economics."

Turnbull, Isabel, B.A., University of Manitoba, 1918. Major: Modern English. Minor: Old and Middle English. Thesis: "Joseph Conrad as a Novelist of Subjective Adventure."

Doctor of Laws

Aikins, Sir James Albert Manning, M.A., LL.B., K.C., Lieutenant-Governor of Manitoba.

Spencer, Joseph William Winthrop, B.A.Sc., M.A., Ph.D., F.G.SS., London and America.

June 19th, 1919

Bachelor of Arts

Biss, Charles Haddon

Bachelor of Laws

Duncan, Durwand Atton
Swinford, Charles

APPENDIX IV.

STUDENTS IN ATTENDANCE, 1918-1919.

ARTS

(Unless otherwise indicated, the Post Office is in Manitoba.)

N.B.—Under the heading "College," U represents University; St. B., St. Boniface College; St. J., St. John's College; W., Wesley College; and Ex-M., Extra Mural. Where the student received instructions at more than one institution, this is indicated, the name of the institution at which the major part of the instruction was received coming first.

First Year

Name	*College*	*Address*
Abremovich, Lawrence Elbert	(U)	Winnipeg
Anderson, Arthur E. O.	(St. J)	Brandon
Anderson, Ernest Ridley	(St. J)	Cochrane, Ont.
Andrews, Wilbur Edgar	(W)	Winnipeg
Archibald, Ralph George	(W)	Hazelridge
Armstrong, Margery Frances	(U)	Winnipeg
Arnason, Gudmundur	(Ex-M)	Hove
Baillie, Robert	(U)	Winnipeg
Baker, William	(U)	West Kildonan
Beaulieu, Lucien	(St. B)	St. Boniface
Beavis, Amy Myrtle	(U)	Crystal City
Bergstrom, Inga Cecilia	(Ex-M)	Elkhorn
Bernier, Raymond	(St. B)	St. Boniface
Bickle, Warner Pentland	(St. B)	Portage la Prairie
Boileau, Caroline	(Ex-M)	Winnipeg
Boissy, Ernest	(St. B)	Letellier
Bokofsky, Jacob	(St. J)	Theodore, Sask.
Booke, Samuel Louis	(U)	Winnipeg
Bonnycastle, Richard H. G.	(St. J)	Dauphin
Borm, Agate	(Ex-M)	Winnipeg
Borthwick, Kathleen Virginia	(U)	Morden
Brett, Norman Ewart	(Ex-M)	Dugald
Bridgett, Hellen Elizabeth	(Ex-M)	Virden
Brown, Alda Jeanette	(U)	Minnedosa
Brown, Mabel Lydia	(W)	Winnipeg
Bruce, Robert Leishman	(U)	Carman
Budd, Garnet John	(U)	Winnipeg
Burstein, Joseph	(Ex-M)	Winnipeg
Cairns, Helen Frances	(U)	Winnipeg
Calof, Rockmil	(U)	Winnipeg
Campbell, Jessie MacLean	(U)	Winnipeg
Cardin, Victor J.	(St. B)	Crookston, Minn.
Carter, Mary Roberta	(Ex-M)	Portage la Prairie
Caswell, Mary Kathleen	(U)	Rathwell
Chariton, Morris	(U)	Winnipeg

Name	*College*	*Address*
Chataway, Helen Drinkwater	(St. J)	Winnipeg
Couture, Jean Adelard	(St. B)	St. Boniface
Crondall, Alice Catherine	(Ex-M)	Winnipeg
Crookshanks, Doris Allegra	(W)	Ninga
Dafoe, Elizabeth	(U)	Winnipeg
Dafoe, Marcella Parmelee	(U)	Winnipeg
Daly, Parthenia Alice	(U)	Selkirk
Dandenault, Auguste	(St. B)	St. Pierre.
Davey, Dorothy May	(U)	Selkirk
Decosse, Aime	(St. B)	Somerset
Delgaty, William George	(U)	Treherne
Dempsey, Samuel James	(W)	Neepawa
Dewey, Leveret Hartly	(St. J)	Moose Jaw, Sask.
Dobnov, Annie	(U)	Winnipeg
Downie, Laura Elizabeth	(U)	Winnipeg
Fares, Merle Marian	(U)	Winnipeg
Fraser, John McCulloch	(U)	Winnipeg
Gendreau, Louis Phillipe	(St. B)	St. Norbert
Gilbert, Helen Elizabeth	(U)	Winnipeg
Gilmer, Grace Evelyn	(U)	Winnipeg
Goodeve, Marjorie Eunice	(U)	Winnipeg
Goulet, Denys	(St. B)	St. Boniface
Graham, Matthew Ernest	(W)	Winnipeg
Granovsky, Hiram J.	(St. J)	Winnipeg
Hedley, Ethel Jane	(U)	Selkirk
Henderson, Orville Lundy	(U)	Morden
Holloway, Kathleen Emma	(U)	Selkirk
Holtby, Dorothy Mary	(Ex-M)	Winnipeg
Hooper, Mary Kennedy	(U)	Winnipeg
Howden, Norman Campbell	(St. J)	Neepawa
Huddleston, William	(W)	Winnipeg
Hughes, Robert Frederick	(W)	Newdale
Jerrard, Muriel Fay	(U)	Winnipeg
Johnson, Arthur Wallace	(U)	Winnipeg
Kahana, Joseph	(U)	Winnipeg
Kelpin, Marguerite	(Ex-M)	Stony Mountain
Kraus, John	(St. B)	Winnipeg
Korczyuski, Jos.	(St. B)	Ituna, Sask.
Laidlaw, Annie Glendinning	(U)	Winnipeg
Landry, Antoine	(St. B)	Mariapolis
Little, Jean Dunbar	(U)	Boissevain
MacCharles, Florence Margaret	(U)	Manitou
Macdonell, Ambrose Ray	(U)	Winnipeg
Mackenzie, Jessie Elizabeth C.	(Ex-M)	Portage la Prairie
MacLeod, Florence	(Ex-M)	Winnipeg
Magnusson, Agnar Rae	(W)	Lundar
Malisky, Omer	(St. B)	Ranfurly, Alta.
Marcoux, Gabriel	(St. B)	St. Boniface

Name	*College*	*Address*
Marion, Eliza A.	(Ex-M)	Winnipeg
Marcovitch, William	(U)	Cupar, Sask.
Marko, Stephen	(St. B)	Cromwell
Matheson, John Pritchard	(St. J)	Winnipeg
McDonald, George A.	(Ex-M)	Virden
McKay, Phyllis	(Ex-M)	Portage la Prairie
McKenty, Donalda	(Ex-M)	Winnipeg
McLachlin, Mona Mary	(W)	Dauphin
McNiven, Bessie Jean	(Ex-M)	Virden
Miller, Mazie Christine	(Ex-M)	Portage la Prairie
Mills, Evelyn Vivian	(W)	Swan River
Moore, Bessie	(U)	Winnipeg
Motley, Edith Bertha	(U)	Winnipeg
Muller, Celestin	(St. B)	St. Boniface
Nachumsohn, Sadie	(Ex-M)	Winnipeg
Newton, Dorothy Marguerite	(U)	Winnipeg
Ostry, Ethel	(U)	Winnipeg
Oswald, Gwendolyne	(W)	Winnipeg
Parent, Ambrose	(St. B)	Winnipeg
Parent, Florentine	(U)	Winnipeg
Perkins, James Edward	(U)	Winnipeg
Portigal, Elsie Pauline	(U)	Winnipeg
Powys, Margaret Lybbe	(U)	Winnipeg
Prefontaine, J. Edouard	(St. B)	St. Boniface
Puttee, Winnifred	(U)	Winnipeg
Rabinovitch, Annie	(U)	Morden
Ramsay, Ella Murielle	(W)	Dauphin
Ratner, Joseph G.	(U)	Winnipeg
Ross, Jessie McLean	(U)	Selkirk
Robison, Ivan Campbell	(U)	Carman
Ross, Donald Alexander	(W)	Devlin, Ont.
Ross, Katharine McIntyre	(U)	Selkirk
Rumball, Wilfrid Gladstone	(U)	Winnipeg
Saper, Solomon	(U)	Yorkton, Sask.
Sigurdson, Theodore	(Ex-M)	Deloraine
Sigurjonsson, Johann E.	(W)	Winnipeg
Smith, Henry Gordon Harvey	(St. J)	Winnipeg
Smith, Kathleen	(U) (Ex-M)	Sturgeon Creek
Smith, Kathleen Mulvey	(U)	Winnipeg
Smith, Laurence C. E.	(U)	Winnipeg
Sparling, Mabel Beryl	(U)	Sperling
Spry, Graham	(U)	Winnipeg
Stacy, Angeline Joan	(U)	Winnipeg
Stefansson, Halldor J.	(W)	Holar, Sask.
Stein, Harry	(U)	Winnipeg
Stensky, Alexander H.	(St. B)	Winnipeg
Stewart, Adele Isabel	(U)	Treherne
Telfer, Luella Mae	(W)	Vancouver, B.C.
Tessler, Harry	(U)	Winnipeg

Name	*College*	*Address*
Tod, Alexandra Charlotte	(U)	Winnipeg
Topper, Beth Ida	(U)	Winnipeg
Tucker, Marion Grace	(Ex-M)	Portage la Prairie
Warrington, Albert Edward S.	(U)	Russell
Weller, Elizabeth	(U)	Winnipeg
Whiteford, Olive	(W)	Manitou
Whiteford, Myrtle Vinette	(W)	Manitou
Whyte, Doris Elizabeth	(U)	Winnipeg
Williams, Arthur Elizabeth	(St. J)	Weyburn, Sask.
Williams, Sarah Lavinia B.	(Ex-M)	Virden
Wilson, Sarah Marguerite	(U)	Winnipeg
Wilson, Jack Osborne	(Ex-M)	Virden
Winger, Martha	(U)	Winnipeg
Wyrzykowski, Dominic	(St. B)	Beausejour

Second Year Arts

Allingham, Clara Margaret	(W)	Broadview, Sask.
Alton, Herbert Edward	(U)	Winnipeg
Anderson, Elin L.	(W)	Norwood
Arnason, Ingolfur Gilbert	(W)	Winnipeg
Arthur, Joseph	(U)	Winnipeg
Atkinson, Thomas Harold	(U)	Winnipeg
Austin, Winifred Gladstone M.	(U)	Winnipeg
Azoulof, Juda	(Ex-M)	St. Boniface
Beaucage, Antoine	(St. B)	St. Boniface
Benard, Leon	(St. B)	Winnipeg
Bernstein, Maurice Herman	(Ex-M)	Winnipeg
Biss, Charles Haddon	(Ex-M)	Belding, Michigan
Boughen, Leonard	(Ex-M)	Herbert, Sask.
Broadfoot, Ina Isobel	(U)	Gladstone
Bryce, Helen Forbes	(U)	Winnipeg
Caron, Martial	(St. B)	St. Charles
Coppleman, Archie	(U)	Lockport
Crane, Ellen M.	(U)	Weyburn, Sask.
Creighton, Vera Youmans	(Ex-M)	Alameda, Sask.
Cross, Eva Alice	(U)	Winnipeg
Cumming, Isabell Mary	(U)	Winnipeg
Davis, Marjorie Langdon	(W)	Neepawa
Diner, Nathan	(U)	Winnipeg
Dufort, Alphonse	(St. B)	St. Norbert
Enright, Florence Anna	(U)	Winnipeg
Falardeau, Ethel M.	(U)	Winnipeg
Ferguson, Eva M.	(U)	Dauphin
Fleming, Margaret Davidson	(U)	Winnipeg
Fletcher, James Gordon	(U)	Winnipeg
Hazelwood, Myrtle M.	(U)	Winnipeg
Heeney, Arnold Danford	(St. J)	Winnipeg
Hoffer, Peter	(U)	Winnipeg

Name	*College*	*Address*
Johnson, Emma Laura	(Ex-M)	Dauphin
Johnston, Harry	(U)	Toome, Ireland
Kennedy, Norma Claire	(St. J)	Parkdale
Kenzie, Walter Alphonse	(U)	Winnipeg
Kozczynski, John	(St. B)	Hubbard, Sask.
LaFleche, Carville	(St. B)	St. Charles
Lamont, Winnifred Margaret	(U)	Treherne
Lemay, Eugene	(St. B)	St. Boniface
Leveque, Guillaume Alfred R	(St. B)	St. Boniface
Longmore, Roderick Hector	(St. J)	Carman
Lovell, Mildred Agnes	(U)	Winnipeg
McCartney, Roy	(W)	Emerson
McEachran, Stephen	(St. B)	Notre Dame de Lourdes
McGregor, Mabel Cranstoun	(U)	Winnipeg
McIntosh, George Thomas	(U)	Dauphin
McIntyre, Blanche	(U)	Virden
McQuillin, Clarence Winston	(U)	Winnipeg
Mills, Albert Livingstone	(W)	Swan River
Mills, Elsie D.	(U)	Winnipeg
Nason, Lizetta R.	(U)	Winnipeg
Newman, Frank Wright	(U)	Portage la Prairie
Norton, Miriam Isabel D.	(U)	Winnipeg
Ozers, Samuel	(St. B)	Winnipeg
Parent, Aime G.	(St. B)	Letellier
Piedalue, Wilfrid	(St. B)	Highgate Centre, Vt.
Pritchard, Charlotte L.	(U)	Winnipeg
Rabinovitch, Archie	(U)	Morden
Robertson, Anna	(U)	Norwood
Robertson, Hugh Alexander	(U)	Holland
Robins, George Ernest	(W)	Winnipeg
Rosevear, Marion	(U)	Winnipeg
Rosburgh, James M.	(Ex-M)	Fort Saskatchewan, Alta.
Saunders, Doris Boyce	(U)	Winnipeg
Salter, Grace	(U)	Winnipeg
Schoenau, Kathleen	(U)	Winnipeg
Schmidt, Effie Estella	(Ex-M)	Virden
Scott, Nellie A.	(Ex-M)	Minto
Shera, Louis	(U)	Winnipeg
Shiers, Enid	(U)	Winnipeg
Smith, Bernice A.	(U)	Winnipeg
Smith, Geo. E.	(Ex-M)	Kimkoia, P.E.I.
Stevenson, Winnifred Amy	(U)	Winnipeg
Talbot, Mary Marjorie	(W)	Winnipeg
Truesdale, Beatrice Dalzell	(U)	Winnipeg
Trumpour, Myrtle Gertrude	(W)	Winnipeg
Vickers, Christopher	(Ex-M)	Greenway

Name	*College*	*Address*
Weinberg, Mollie	(U)	Winnipeg
White, Vera	(U)	Brandon
Weintraub, Max M.	(U)	Winnipeg
Winram, Elspeth Roberta	(U)	Manitou

Third Year Arts

Anderson, May Helga	(U)	Selkirk
Alsaker, A. S.	(U) (W)	Pilot Mound
Alexander, Beatrice Marion	(U)	Winnipeg
Banks, Ada M.	(W)	Penticton, B.C.
Beath, Robert Willard	(W)	Winnipeg
Bedard, Beatrice	(Ex-M)	Winnipeg
Bissett, Florence A.	(U)	Winnipeg
Bodanis, Rose F.	(U)	Winnipeg
Bond, Percy	(Ex-M)	Swan Lake
Bone, Wm. Henry	(U)	Perdue, Sask.
Boulet, Alexander Benjamin	(St. B)	Dunrea
Bourgouin, Jean	(St. B U)	Winnipeg
Brown, Doreen	(U)	Portage la Prairie
Brown, Harvey Richard	(U)	Deloraine
Cameron, Alice	(U W)	Minnedosa
Champagne, Leonce	(St. B)	St. Norbert
Corrigan, Cecil Edwin	(W)	Lampman, Sask.
Cowan, James Percival	(U)	Portage la Prairie
Cunningham, Dorothea	(U)	Carman
Daigneau, Lillie G.	(W)	Winnipeg
Edwards, Nellie	(W)	Indian Head, Sask.
Elliott, George Alexander	(U)	Macklin, Sask.
Fallon, Catherine	(Ex-M)	Winnipeg
Fallon, Mary E.	(Ex-M)	Winnipeg
Fraser, Wellesley	(Ex-M)	Consort, Alberta
Freeman, Alexander	(U)	Winnipeg
George, Jack Albert	(W)	Swan River
Gillies, McLeod	(U)	Baldur
Gordon, John King	(U)	Winnipeg
Green, Cornelius	(Ex-M)	Winnipeg
Greer, Irene	(U)	Winnipeg
Groelle, Evelyn Marie	(U)	Winnipeg
Ham, Leslie Arthur	(U)	Winnipeg
Harvey, Walter Bennet	(Ex-M)	Dugald
Hall, John Henry	(Ex-M)	Sifton
Hestrin, Joseph	(U)	Winnipeg
Heys, Alice Ruth	(U)	Neepawa
Hnatation, Andrew Charles	(U)	Gonor
Hollenberg, Abraham	(U)	Neudorf, Sask.
Hollenberg, Mike Sam	(U)	Neudorf, Sask.
Hunter, Christina	(U)	Winnipeg
Jennings, Alice Myrtle	(U)	Melita

Name	*College*	*Address*
Kennedy, Earl Emerson	(Ex-M)	Dauphin
Landry, Crawford	(St. B U)	Mariapolis
Leveque, Leopold	(St. B)	St. Boniface
Mackay, Dorothy	(U W)	Winnipeg
Marion, Joseph	(St. B U)	St. Boniface
Matheson, Agnes Eleanor	(U)	Winnipeg
Matheson, Beatrice Anne Fraser	(U)	Winnipeg
McHaffie, Ilo Elizabeth	(W)	Swan River
Mollard, Robinson Bert	(U)	Stonewall
Motley, Aileen Sarah	(U)	Winnipeg
Nelson, Edith E.	(W)	Carberry
Osborne, Isobel D'Arche	(U)	Winnipeg
Parker, Grace Elizabeth	(U)	Winnipeg
Parkinson, Sarah Jane	(U W)	Winnipeg
Patterson, Gladys A.	(U)	Winnipeg
Pigott, Arthur V.	(W)	Winnipeg
Puttee, Dorothy Frances	(U)	Winnipeg
Ridd, Dwight Nugent	(W)	Griswold
Riddle, Victor Norman	(U)	Winnipeg
Ross, Beulah Arnold	(W)	Russell
Salter, Grace	(U)	Winnipeg
Schwitzer, Val Eric	(U)	Portage la Prairie
Simpson, Glenn	(U)	Virden
Scott, Mary Stuart	(U)	Winnipeg
Scott, Ida Kirk	(U)	Winnipeg
Sinclair, Burton Leslie	(U)	Stonewall
Spooner, Lois	(U)	Winnipeg
Stefansson, Sigurbjorg	(U W)	Winnipeg
Stephens, Wilhelmine	(U W)	Norwood
Williams, Florence M.	(U)	Winnipeg
Zimmerman, Nathan Benjamin	(U)	Winnipeg

Fourth Year Arts

Abrahamson, Esther	(U)	Winnipeg
Adams, Emily Isabel	(U)	Grenfell, Sask.
Adamson, Ora	(W)	Roland
Armstrong, Wm. Ewart	(U)	Winnipeg
Annis, Jean	(U)	Winnipeg
Barbour, Harold Douglas	(U)	Winnipeg
Bell, Nora Ellen	(U)	Winnipeg
Bone, John Tregurtha	(W)	Pangman, Sask.
Bronfman, Rose	(U)	Winnipeg
Brownstone, Rowena	(U)	Winnipeg
Buchanan, Hazel	(U W)	Winnipeg
Bulman, Bessie	(U W)	Winnipeg

Name	*College*	*Address*
Carey, Harold Eric	(U)	Winnipeg
Chapman, Daryl Rayworth	(U W)	Winnipeg
Conolly, Nora Kathleen	(U W)	Winnipeg
Couture, Eugene	(St. B U)	St. Boniface
Daigneau, Lillie G.	(Ex-M)	Winnipeg
Dick, Clifford Allan	(U)	St. Rose du Lac
Driscoll, Frederick McLeod	(U)	Winnipeg
Edwards, John Angus Manley	(U)	Winnipeg
Foreman, Louise Annie	(W U)	Arden
Fraser, Roy Hamilton	(U)	Winnipeg
Gardner, William	(Ex-M)	Calgary
Gibb, Douglas F.	(U)	Portage la Prairie
Graham, Jean Lorraine	(U)	Winnipeg
Gray, Edith Margaret	(U)	Winnipeg
Greer, Edna H.	(U)	Winnipeg
Harvey, Howard Graham	(U)	Winnipeg
Ibbetson, Percy Victor	(W)	Swan River
Loadman, Frank Ivan	(U)	Winnipeg
Long, Janet Evelyn	(U)	Winnipeg
Macleod, Marjorie K.	(U)	Winnipeg
Margolis, Sarah	(U)	Winnipeg
Markinski, John P.	(U)	Winnipeg
Maybank, Harold Ralph	(U)	Winnipeg
McEachern, Ewart Currie	(Ex-M)	Watrous, Sask.
McRae, Luella	(U W)	Winnipeg
Muller, Gustave C.	(St. B)	St. Boniface
Muller, Louis F.	(St. B)	St. Boniface
Nichols, Wilma Dorothy	(U W)	Winnipeg
Peres, Julie	(Ex-M)	Regina, Sask.
Ridd, John Elwood	(W)	Griswold
Rundle, Florence	(U)	Winnipeg
Runions, Wesley Douglas Gourlay	(U)	Transcona
Smith, John Wilfrid	(U)	Gladstone
Stuart, Gerald Lea	(U)	Peterborough
Travis, Corra	(U W)	Winnipeg
Wackenroder, Henry Frederick	(U)	Winnipeg
Walker, Ruth Anderson	(U)	Winnipeg
Warters, Winnifred Mary	(U)	Winnipeg
Watts, James	(W)	Winnipeg
Zaharychuk, Andrew	(St. B U)	Pelly, Sask.

SPECIAL STUDENTS IN ARTS

CHARTERED ACCOUNTANTS

Name	*College*	*Address*
Horn, Alexander		Winnipeg
Howat, Hugh		Winnipeg
Lofthouse, David S		Winnipeg
Richards, Wilfred		Winnipeg

SPECIAL YEAR IN THEOLOGY

Colvin, Daniel	(M)	Winnipeg*
Fleming, James	(M)	Winnipeg
McCormack, Peter	(M)	Winnipeg
Parker, John C	(M)	Winnipeg
Smook, Basil	(M)	Winnipeg*
Stewart, James	(M)	Winnipeg

* Deceased.

ARCHITECTURE

First Year

Chaffey, Elswood Roscoe E.	(U)	Winnipeg

Second Year

Krendel, Joseph	(U)	Winnipeg
Heatley, Harold Montague	(U)	Winnipeg

Third Year

Jordan, Raymond Sydney	(U)	Winnipeg

Fourth Year

Corrigill, Alexander Stevenson	(U)	Winnipeg

MASTER OF ARTS

Austman, Kristjan J.	Winnipeg
Cameron, Charles F.	Winnipeg
Fleming, H. R.	Winnipeg
Florence, George	Virden
Goodwin, John F.	Winnipeg
Green, Merodach	Winnipeg
Hill, Rev. Joseph H	Rathwell
Huntley, Grace Frances	Stonewall
Lantz, Norah G.	Didsbury, Alberta
McCrea, Roland Lawrence	Hearne, Sask.
McColl, Flora E.	Winnipeg
McColl, Mary L.	Winnipeg
Quainton, Cecil E.	Victoria
Richardson, Ralph Percy	Craik, Sask.
Shortliffe, D. L.	Edmonton, Alberta
Skafel, Einar J.	Griffin, Sask.
Somerset, Marjorie	Oak Lake
Snyder, John H.	Brandon
Szwarok, George	St. Boniface
Taylor, Charles L.	Carman
Turnbull, Isabel	Winnipeg

SENIOR MATRICULATION

ENGINEERING

Name	*Address*
Abraham, Yehuda	Winnipeg
Adamson, Francis W.	Winnipeg
Black, Geo. G.	Winnipeg
Black, Raymond E.	Winnipeg
Brydon, Earl M.	
Cunningham, Kenneth	Winnipeg
Davis, Richard E.	Emerson
Eyford, Cornell T. E.	Winnipeg
Gilbert, Gordon N.	Winnipeg
Gould, William W.	Winnipeg
Halland, Henrick N.	Winnipeg
Henry, John R.	Winnipeg
Lechtzier, Saul	Winnipeg
Le Neven, Arthur Philip C.	Winnipeg
Porte, Geo. Allan	Niverville
Mitchell, James I.	Selkirk
Riley, Richard C.	Winnipeg
Robson, Wm. Gordon	Winnipeg
Ross, Geo. H.	Minnedosa
Schnarr, Wilfrid W.	Killarney
Sigurjonson, Jon	Winnipeg
Sinaisky, Aaron	Winnipeg
Valde, Ben E.	Winnipeg
Watson, Stuart C.	Winnipeg
Worthington, Roy E.	Winnipeg

MEDICINE

Adamson, Gilbert L.	Winnipeg
Anderson, Robert N.	Winnipeg
Banon, Gerald	Winnipeg
Basted, Meffie R.	Winnipeg
Bastin, Mary D.	Winnipeg
Beaudoing, Leon	Notre Dame de Lourdes
Beckman, Isaac A.	Winnipeg
Brown, Frank K.	Carman
Bunze, Martha E.	Winnipeg
Cohen, Reuben	Winnipeg
Corrigan, Cecil E.	Lampman, Sask.
Cumming, Nathaniel L.	Winnipeg
Diamond, Jacob C.	Winnipeg
Dubnove, Isaac	Winnipeg
Eisenstein, Samuel	Winnipeg
Epstein, Myer	Winnipeg
Fox, Maurice Z.	Winnipeg
Genser, Aaron	Winnipeg
Granovsky, Hiram J.	Winnipeg
Grieve, Harry G.	Winnipeg
Hall, Alcina E.	Brandon
Hardy, Nigel	Winnipeg
Halliday, David J.	Gainsboro, Sask.
Hershfield, Louis	Winnipeg
Hickson, Beulah	Winnipeg
Hoskins, George A.	Winnipeg

Name	*College*	*Address*
Hurton, Robert		Carman
Jeffery, Robert		Winnipeg
Johnson, Olafia		Winnipeg
Johnson, Elswood		Winnipeg
Jickling, James A.		Winnipeg
Katz, Harry		Winnipeg
Malis, Solomon		Winnipeg
McBean, Myrtle Jean		Winnipeg
McCullagh, E. Perry		Roland
McDiarmid, John Menzies		Winnipeg
McDougall, John A.		Winnipeg
Meltzer, Sara		Winnipeg
Onhauser, Clara M. R.		Winnipeg
Pearl, Sarah A.		Winnipeg
Portnuff, Harry		Winnipeg
Punak, Nicholas		Winnipeg
Ross, Cecil C.		Winnipeg
Siegelman, Ben J.		Winnipeg
Steiman, Israel		Winnipeg
Somerville, Vira		Winnipeg
Stevens, Iva		Winnipeg
Waldon, Harold V.		Winnipeg
Williamson, George A.		Winnipeg

ENGINEERING

First Year

Allen, John McNaught	(U)	Winnipeg
Bider, Bernard	(U)	Winnipeg
Bronstein, Samuel	(U)	Winnipeg
Doidge, Henry George	(U)	Winnipeg
Emery, Harold	(U)	Winnipeg
Greenstein, John	(U)	Winnipeg
Hehn, John Aubrey	(U)	Winnipeg
Hirota, Seimei	(U)	Japan
McCuaig, Donald Alexander	(U)	Minto
Nijedly, Joseph Wm.	(U)	Ladywood
O'Day, John Edward	(U)	Winnipeg
Pybus, Ralph	(U)	Winnipeg
Rigby, William Ralph	(U)	Winnipeg
Trueman, James Cobden	(U)	Winnipeg
Walde, Benjamin Edwin	(U)	Winnipeg
Young, Minto D.	(U)	Winnipeg

Second Year

Armstrong, Harold Miller	(U)	Carman
Bregman, Max	(U)	Winnipeg
Dick, Victor William	(U)	Winnipeg
Dingle, James	(U)	
Fleming, John Murray	(U)	Winnipeg
Johnson, Emil E.	(U)	Winnipeg
Litin, Leon	(U)	Winnipeg
Sinclair, G. E. Blake	(U)	Rainy River, Ont.
Smith, Robert Leandrew	(U)	Winnipeg

MEDICINE

First Year

Name	*College*	*Address*
Andison, Harry Martin	(U)	Winnipeg
Argue, Stanley E. C.	(U)	Norwood
Beath, Euphemia Gray	(U)	Winnipeg
Bennett, Marcel F.	(U)	Norwood
Beaudoing, Leon	(U)	Notre Dame de Lourdes
Bridge, Reginald Clifford	(U)	Carman
Cameron, Catherine Jane	(U)	Shoal Lake
Cameron, Marie Christina	(U)	Shoal Lake
Crane, George L.	(U)	Weyburn, Sask.
Cuddy, Thomas Hughes	(U)	Winnipeg
Durnin, Thomas Orton	(U)	Winnipeg
Falardeau, Ivy Frances	(U)	Winnipeg
Ferguson, JanetElizabeth	(U)	Winnipeg
Gardner, James Stanley	(U)	Winnipeg
Gerrie, Grace Mildred	(U)	Winnipeg
Guttman, Alex.	(U)	Winnipeg
Hill, Milton Henry	(U)	Norwood
Holtby, Hilton Edmund	(U)	Saskatoon, Sask.
Jauvoish, Simon	(U)	Winnipeg
Jonsson, Olafie J.	(U)	Gimli
Knapp, Inda Stuart	(U)	Winnipeg
Leavitt, Arthur Sigmund	(U)	Winnipeg
Levick, Julius	(U)	Winnipeg
McCharles, Clarence William	(U)	Winnipeg
Mather, James Hartley	(U)	Saskatoon, Sask.
McPhail, Gladstone	(U)	Ladstock, Sask.
Pearlman, Solomon Joseph	(U)	Winnipeg
Popham, Harold Edwin	(U)	Winnipeg
Riddell, Leroy Henry	(U)	Winnipeg
Rioch, Margaret Geo.	(U)	Kenora, Ont.
Rogers, Harold Thompson	(U)	Plumas
Ross, William Percival	(U)	Heward, Sask.
Rybak, Francis Adam	(U)	Winnipeg
Sedziak, Francis	(U)	Grand Vital
Shubinsky, Abraham	(U)	Winnipeg
Sokolofski, Mary Queenie	(U)	Winnipeg
Stephenson, Edwin Frederick	(U)	Winnipeg
Thompson, Edward Theodore	(U)	Winnipeg
Van Vliet, William B.	(U)	Winnipeg
Wackenroder, Henry F.	(U)	Winnipeg
Walkin, Frank	(U)	Winnipeg
Wright, Hiram	(U)	Cobden, Ont.
Zhivotovsky, Ben	(U)	Winnipeg

Second Year

Azoulof, Judah	(U)	Winnipeg
Bellas, Joseph	(U)	Saskatoon, Sask.
Benson, Johann	(U)	Winnipeg
Benwell, Harry Dalton	(U)	Melville, Sask.
Carroll, Percival James	(U)	Carman
Carson, Julius Harry	(U)	Vancouver
Chown, Henry Bruce	(U)	Winnipeg
Davidson, George Alexander	(U)	Winnipeg

Name	*College*	*Address*
Dyma, Brany	(U)	Winnipeg
Fieldman, Joseph David	(U)	Winnipeg
Goodwin, Alexander McLean	(U)	Elkhorn
Graham, Gordon Douglas	(U)	Winnipeg
Hershfield, Harry	(U)	Winnipeg
Hogg, Arthur W.	(U)	Winnipeg
Isaacs, Hyman David	(U)	Winnipeg
Jackson, Joseph Leonard	(U)	Edmonton, Alberta
Kinneard, George	(U)	Winnipeg
Lee, George Harold	(U)	Souris
MacLean, Donald John Gunn	(U)	Winnipeg
Maclean, Willard Gladstone	(U)	Winnipeg
MacRae Donald Colin	(U)	Carlyle, Sask.
McFadyen, Oscar James	(U)	Parkbeg, Sask.
Musgrove, Wilfrid Merle	(U)	Boissevain
Ryall, Edwin James	(U)	Carman
Seipp, Isadore	(U)	Winnipeg
Steele, Arthur Bruce	(U)	Hamiota
Stewart, Roy John	(U)	Neepawa
Uhle, Otto	(U)	Niverville
Wilson, Ada I.	(U)	Gladstone
Wood, William James	(U)	Winnipeg

Third Year

Abbott, Albert Clifford	(U)	Winnipeg
Austman, Kristjan Jonsson	(U)	Winnipeg
Blakie, Neil Hector	(U)	Shoal Lake
Campbell, William Roy	(U)	Regina
Cunningham, Edison Rainey	(U)	Winnipeg
Dubnove, Aaron	(U)	Winnipeg
Finkelstein, Manly	(U)	Winnipeg
Fraser, Donald John	(U)	Winnipeg
Fraser, Wm. Ross	(U)	Reston
Good, Hilton Samuel	(U)	Winnipeg
Goodwin, John Murray	(U)	Oak Lake
Grant, William C. M.	(U)	Winnipeg
Green, Samuel Simon	(U)	Winnipeg
Gryte, Lewis R.	(U)	Culross
Hamilton, Thos. Wilfred	(U)	Crandall
Henry, John Milton	(U)	Edmonton, Alberta
Kitchen, Hubert Daniel	(U)	Souris
Little, George Meldrum	(U)	Montmartre, Sask.
Magwood, William James	(U)	Killarney
McCrimmon, John Roderick	(U)	Carman
McFadyen, Oscar James	(U)	Parkbeg, Sask.
McGuire, Jas. B.	(U)	Winnipeg
McKenzie, Wm. Gordon	(U)	Deloraine
Meredith, Charles James	(U)	Glenboro
Menzies, Alex. Morrison	(U)	Pender Island, B.C.
Mollard, William Melville	(U)	Balmoral
Morison, Harold	(U)	Winnipeg
Pincock, Thomas Alexander	(U)	Winnipeg
Pozer, Richard Bruce	(U)	Winnipeg
Rady, Max Solomon	(U)	Winnipeg
Rogers, Roy L	(U)	Oxbow, Sask.

Name	*College*	*Address*
Sibbald, Malcolm Lewis	(U)	Winnipeg
Simpson, James Wendell	(U)	Winnipeg
Skaling, James Henry	(U)	Vancouver, B.C
Taylor, Harriett Olive	(U)	Winnipeg
Thompson, Steinn Olafur	(U)	Selkirk
Walsh, Frank Burton	(U)	Oxbow, Sask.
Yuill, Victoria Irene	(U)	Neudorf, Sask.
Fourth Year		
Bowman, Maxwell	(U)	Miami
Brownlee, Thomas Irwin	(U)	Dumas, Sask.
Davidson, Allan J.	(U)	Winnipeg
Etsell, Edward	(U)	Virden
Ferrier, Herman J.	(U)	Brandon
Findlay, Elizabeth	(U)	Winnipeg
Findlay, Jessie	(U)	Winnipeg
Greenidge, Hewburn N.	(U)	Georgetown, Br. Guiana
MacCharles, M. R.	(U)	Manitou
MacQueen, Donald Gordon	(U)	Winnipeg
Moore, John Harold	(U)	Wiste, Alberta
Netterfield, William Carey	(U)	Kisbey, Sask.
Parker, Arthur O	(U)	Snowflake
Rodin, Frank Highman	(U)	Winnipeg
Salmond, Paul Hammersley	(U)	Regina
Scott, Stuart McIntyre	(U)	Morden
Shapera, George Harold	(U)	Winnipeg
Turner, Oscar Anthony	(U)	Invermay, Sask.
White, Ira S.	(U)	Pilot Mound
Yule, Robert Foreman	(U)	Killarney
Fifth Year		
Alexander, Edward Hart	(U)	Winnipeg
Arnason, Jon Skuta	(U)	Winnipeg
Backman, Kristjan Jens	(U)	Clarkleigh
Beaton, Wesley Grant	(U)	Moose Jaw, Sask.
Black, Boris	(U)	Grand Forks, N.D.
Black, Robert	(U)	Transcona
Blair, Alexander Kenneth	(U)	Hampden, N.D.
Creighton, Walton Arthur	(U)	Saskatoon
Dicks, Royal Edwin	(U)	Teulon
Elder, George Gordon	(U)	Souris
Ganton, David William	(U)	Winnipeg
Good, John Ralph	(U)	Winnipeg
Granofsky, Sophie Antoinette	(U)	Winnipeg
Henderson, Randolph Churchill	(U)	Winnipeg
Herbert, Stanley Gordon	(U)	Winnipeg
Hossack, John Cruikshank	(U)	Winnipeg
Johnston, Thos. Henry	(U)	Winnipeg
Keyes, Wm. James Arnold	(U)	Killarney
Kraminsky, Samson	(U)	Winnipeg
Lapointe, Joseph Philorum	(U)	St. Barnabe, P.Q.
Matheson, Henry Angus	(U)	Tatamagouche, N.S.
McCallum, Donald	(U)	Ganonoque, Ont.
McColgan, James Wellington	(U)	Winnipeg
McKinnon, Alexander Garland	(U)	MacGregor

Name	*College*	*Address*
Minish, Nathaniel James	(U)	Gilbert Plains
Morrow, James Moore	(U)	Norwood
Nicholson, Daniel	(U)	Commercial Cross P.E.I
Rodgers, Lawrence Morrison	(U)	Lloydminster, Sask.
Seale, Carl William Edward	(U)	Birtle
Sommerville, Andrew Neville	(U)	Winnipeg
Taylor, Ellen Fraser	(U)	Bengough, Sask.
Thorlakson, Paul Henry T.	(U)	Selkirk
Victor, Benjamin Aaron	(U)	Winnipeg
Wannop, George Graham	(U)	Winnipeg
Winchell, E. Dickson	(U)	Winnipeg
Woodside, Harold Anson	(U)	Port Arthur, Ont.

PHARMACY

First Year

Black, John	(U)	Winnipeg
Budd, Arthur Samuel	(U)	Winnipeg

Second Year

Chariton, Harry	(U)	Winnipeg
Corbett, Emma	(U)	Crystal City
Eaton, Blake Scott	(U)	Winnipeg
Elliot, William Bell	(U)	Winnipeg
Fondaminisky, Israel	(U)	Winnipeg
Lightbody, William	(U)	Winnipeg
Ruttan, Henry Carman	(U)	Winnipeg

LAW

First Year

Brandon, Isabel Albina	(Ex-M)	Regina, Sask.
Broatch, Angus Campbell	(U)	Moose Jaw, Sask.
Brotman, Ernest A.	(U)	Winnipeg
Christie, Augustus J	(U)	Winnipeg
Crispo, Francis Herbert	(U)	Winnipeg
Cross, Jesse Edward	(U)	Baldur
Deacon, Ivan James Rochester	(U)	North Bay, Ont.
Eggertson, Arni Gudni	(U)	Winnipeg
Griffen, John Edward	(U)	Winnipeg
Hinkson, Ernest Wesley	(Ex-M)	Regina, Sask.
Kahana, Joseph	(U)	Winnipeg
Kaplan, Fred W.	(U)	Winnipeg
Little, Thomas	(Ex-M)	Dauphin
Macleod, George P.	(U)	Winnipeg
McMurray, Mildred Beatrice	(U)	Oak Bank
Moore, Wm. Athol	(U)	Treherne
Reid, Joseph Thomas	(Ex-M)	Regina, Sask.
Roberts, Alfred James	(U)	Miami
Robinson, William	(Ex-M)	Kelliher, Sask.
Rosen, Douglas S.	(U)	Winnipeg
Rosenthal, Leon J.	(U)	Winnipeg

Second Year

Name	*College*	*Address*
Abrahamson, Sara	(U)	Stonewall
Bass, Morris	(U)	Winnipeg
Cantor, Alexander	(U)	Winnipeg
Carr, Rupert	(U)	Winnipeg
Denenberg, Dan	(U)	Winnipeg
Ferguson, William Graham	(U)	Winnipeg
Forrest, Catherine Isabel	(Ex-M)	Souris
Gemmill, Shirley Patrick	(U)	Winnipeg
Giles, John Wm. Fares	(U)	Winnipeg
Halprin, Joseph	(U)	Winnipeg
Inglis, Vincent Wilson	(U)	Winnipeg
Jackson, Douglas Rae	(U)	Winnipeg
Levin, Norman Cecil	(U)	Norwood
Michell, David Charles	(U)	Winnipeg
Nichols, Anna Rosalind	(U)	Winnipeg
Popp, John	(U)	Winnipeg
Portigal, Samuel L.	(U)	Winnipeg
Stewart, Charles Alex	(Ex-M)	Herbert, Sask.
Wyrzykowski, Casimir Theodore	(U)	Beausejour

Third Year

Cameron, Clara Alison	(U)	Winnipeg
Collins, Franklin Kay	(U)	Winnipeg
Donovan, Gertrude	(U)	Winnipeg
Gordon, William	(U)	Norwood
Jacobson, Lindal Walter	(Ex-M)	Winnipeg
Johnston, Donald Murdoch	(Ex-M)	Herbert, Sask.
Kopstein, Maxwell, E.	(U)	Winnipeg
Leavitt, William Wolfe	(U)	Winnipeg
Lindal, Jorun Hinrikson	(U)	Winnipeg
Maloney, James Theodore	(U)	Winnipeg
McArthur, Clarence V.	(U)	Winnipeg
Otis, Laurence LeRay	(U)	Winnipeg
Pritchard, Artemas Paul	(U)	Winnipeg
Prud'homme, Arthur A.	(U)	St. Boniface
Read, Frederick	(U)	Winnipeg
Reynolds, Wm. Clifford	(U)	Winnipeg
Treleaven, John Clifford	(Ex-M)	Eston, Sask.
Yakimischak, Dmytro	(U)	Pleasant Home

AGRICULTURE

Third Year

Bodnar, Theodore	Fisher Branch
Graham, John Douglas	Roland
Norquay, John	Pigeon Bluff
Prodan, Cornelius	Sifton
Sallans, Bryce John	Pipestone
Shannon, Evelyn Foster	Winnipeg

Fourth Year

Name	*Address*
Burnside, John	Keyes
Clarke, Sydney E.	Norwood
Iverach, William Ewart	Isabella
Josephson, Holgi B.	Candahar, Sask.
Popp, William	Winnipeg
Sturrock, Philip	Brownfield, Alta.
Sutherland, James K.	Edon
Trembath, James	Cartwright

Fifth Year

Cox, John Alvin	Union Point
Einarsson, Stoini	Calder Station, Sask.
Bissett, Chester R. G.	Winnipeg
Hayter, Ernest	Grandview
Heise, Russell E.	Isabella
Kennedy, William A.	Winnipeg
MacWilliam, Alexander	Rossendale
Stratton, Arthur K.	Stonewall
Tolton, James H.	Oak Lake
Walker, Gordon B.	Antler, Sask.
Weir, William Gilbert	Rosebank

HOME ECONOMICS

Third Year

Benson, Nora Kathleen	Neepawa
Graham, Nora E.	Neepawa
Hallwright, Gladys Ellington	Victoria, B.C.
Reid, Margaret	Cardale
Shafer, Alberta I.	Guernsey, Sask.
Sissons, Verna V. V.	Portage la Prairie
Sproule, Laurie	Winnipeg
St. Ruth, Doris	Kelloe, Man.
Thompson, Ethel Frances	Newton Siding
Thordarson, Thorey	Winnipeg

Fourth Year

Bruce, Gertrude Josephine	Lashburn, Sask.
Fee, Elinor Janette	Hartney
Judson, Evadine	Taber, Man.
Kennedy, Anna Lucille	Winnipeg

Fifth Year

Armstrong, Ethel	Brandon
Henry, Gladys M.	Killarney
Moore, Evelyn	Manitou
Speechley, Margaret	Winnipeg

EVENING BUSINESS COURSES

Commercial Law I.

Name	*Address*
Crawley, Robert	Winnipeg
Fairley, Alexander M	Winnipeg
Flester, Wm. M	Winnipeg
Forsyth, W. E.	Winnipeg
Greenwood, Crossley	Winnipeg
Garnett, Gilbert	Winnipeg
Goodman, Geoffery H	Winnipeg
Gundy, John	Winnipeg
Hoover, Sidney E.	Winnipeg
Hockin, Harold	Winnipeg
Horne, Henry B.	Winnipeg
Johnson, Frederick	Winnipeg
MacDonald, Hamish R.	Winnipeg
MacArthur, Harold D.	Winnipeg
Mann, Daniel	Winnipeg
Pawlett, Duncan H.	Winnipeg
Pearce, G. V	Winnipeg
Richards, Wilfred	Winnipeg
Stevenson, Alex	Winnipeg
Williams, Wm. G	Winnipeg
Wolfe, Alfred M.	Winnipeg

Commercial Law II.

Betts, N. R.	Winnipeg
Chidwick, Chas. R.	Winnipeg
Craig, Herbert	Winnipeg
Cox, Sidney E	Winnipeg
Du Moulin, S. Stewart	Winnipeg
Garnett, Gilbert	Winnipeg
Murray, D. A. B.	Winnipeg
Rathjen, Thomas H	Winnipeg
Smele, Henry Wm	Winnipeg
Whyte, David C	Winnipeg
Pearce, S. W.	Winnipeg

Accounting I.

Baker, Harry	Winnipeg
Bryers, Brandon H	Winnipeg
Bousfield, Stafford	Winnipeg
Carson, John	Winnipeg
Carmichael, James	Winnipeg
Clare, George F	Winnipeg
Crawley, Robert I	Winnipeg
Craig, Arthur	Winnipeg
Currie, George	Winnipeg
Dexter, H. P	Winnipeg
Fairley, Alex. M	Winnipeg
Grant, James	Winnipeg
Holloway, John L	Winnipeg
Jack, Robert	Winnipeg
Kellerd, Mrs. E. W	Winnipeg
McGregor, Duncan	Winnipeg
Millan, George Albert	Winnipeg

Name	*Address*
Myren, Michael A	Winnipeg
Nicholson, Percy H	Winnipeg
Olafson, Jenny L	Winnipeg
Plant, William	Winnipeg
Pawlett, Duncan H	Winnipeg
Plaker, Rudyard L	Winnipeg
Rigg, Wilfrid C.	Winnipeg
Wallace, Ada J	Winnipeg
Sparrow, Wm. S.	Winnipeg
Unger, Gwendoline M	Winnipeg
Wolfe, Alfred M	Winnipeg
White, Arthur	Winnipeg
Prette, Annie	Winnipeg
West, N.	Winnipeg

Accounting II.

Abraham, Harry E	Winnipeg
Ackeson, Matthew H	Winnipeg
Baker, Wm	Winnipeg
Black, Wm. L	Winnipeg
Bugee, Francis P	Winnipeg
Betta, Nina K.	Winnipeg
Burnside, David	Winnipeg
Crawley, Robert	Winnipeg
Forsyth, W. E.	Winnipeg
Grundy, John	Winnipeg
Horne, Henry B.	Winnipeg
Johnson, Frederick	Winnipeg
Slocombe, Karl Gladstone	Winnipeg
Smele, Henry W.	Winnipeg
McMasher, Mary	Winnipeg
Mann, Daniel	Winnipeg
Maddock, John A	Winnipeg
Watson, Wm. R	Winnipeg

Accounting III.

Aitkins, Wm	Winnipeg
Chidwick, Charles R	Winnipeg
Galbraith, Bertram C.	Winnipeg
Lofthouse, David S	Winnipeg
Murray, D. A. B	Winnipeg
Rathjen, Thomas H	Winnipeg
Whyte, David C	Winnipeg

Business English

Barrett, Roy A	Winnipeg
Bell, Marion E	Winnipeg
Wilman, Morris C	Winnipeg
Evans, Millicent	Winnipeg
Fraser, Donald M	Winnipeg
Grant, Donald J	Winnipeg
Henchart, Wilhelmina	Winnipeg
Hogg, Maurice	Winnipeg
Schioler, Kai B	Winnipeg
Smith, Edward B	Winnipeg
Walker, David I	Winnipeg

Insurance

Name	*Address*
Anderson, Arthur D.	Winnipeg
Anderson, H. B	Winnipeg
Bell, Marion	Winnipeg
Brydon, J. C	Winnipeg
Baird, John H	Winnipeg
Campbell, Frederic R	Winnipeg
Cameron, Roscoe C	Winnipeg
Carey, Redmond S	Winnipeg
Currie, Mary M	Winnipeg
Eadie, John L	Winnipeg
Eagley, Cecil H	Winnipeg
Finch, C. W	Winnipeg
French, Florence E	Winnipeg
Grant, Milton D	Winnipeg
Harris, Max	Winnipeg
Hart, Walter T	Winnipeg
Henry, Norman B	Winnipeg
Irwin, A. J	Winnipeg
Johnson, Ljotun	Winnipeg
Kelly, John	Winnipeg
Kennedy, Albert C	Winnipeg
Kimmel, Reuben	Winnipeg
Lawson, J. William	Winnipeg
McCabe, Henry R	Winnipeg
Oakes, Albert H	Winnipeg
O'Grady, John Martin A	Winnipeg
Scott, Douglas J	Winnipeg
Power, Mrs. Clara J	Winnipeg
Tubb, Charles T	Winnipeg
Turner, Charles S	Winnipeg
Tirsman, Max	Winnipeg
Trites, T. G	Winnipeg

Auditing I.

Flestin, W. M	Winnipeg
Greenwood, Crossley	Winnipeg
Goodman, J. H	Winnipeg
Hoover, Sidney E	Winnipeg
Horne, Henry B	Winnipeg
Johnson, Frederick	Winnipeg
Portigal, S. A	Winnipeg

Auditing II.

Aikins, Wm.	Winnipeg
Chidwick, Charles Robert	Winnipeg
Galbraith, Bertram	Winnipeg
Lofthouse, David S	Winnipeg
Rathjen, Thomas H	Winnipeg
Whyte, David S	Winnipeg

SUMMARY

ARTS—		
First Year	176	
Second Year	91	
Third Year	82	
Fourth Year	54	
		403

MASTER OF ARTS		21

SENIOR MATRICULATION—		
Engineering	32	
Medicine	63	
		95

SPECIAL—		
Students in Arts		22

SCIENCE—		
First Year	10	
Second Year	2	
Third Year	1	
Fourth Year	7	
		20

ENGINEERING—		
First Year	17	
Second Year	9	
		26

ARCHITECTURE		12

MEDICINE—		
First Year	42	
Second Year	29	
Third Year	38	
Fourth Year	20	
Fifth Year	35	
		164

PHARMACY—		
First Year	2	
Second Year	7	
		9

LAW—		
First Year	20	
Second Year	19	
Third Year	15	
		54

AGRICULTURE—		
Third Year	6	
Fourth Year	8	
Fifth Year	11	
		25

HOME ECONOMICS—		
Third Year	10	
Fourth Year	4	
Fifth Year	4	
		18

EVENING COURSES—		
Life Insurance	27	
Business English	6	
Accounting, I	29	
Accounting, II	16	
Auditing	12	
Commercial Law	24	
Exclusive Duplicates	58	
		172

Grand Total		927